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The Implementation Planning Program is a collection of computer programs designed to assist the State governments in preparing their implementation plans for sulfur oxides and particulates. This Volume (II) is designed to be used in conjunction with Volume I to assist the user in the installation, verification and maintenance of the component programs of the Implementation Planning Program. The component programs are as follows: Sour File Maintenance Program, Air Pollution Concentration Program, Source Contribution File merge program, Control Cost Program, Control Cost File Update Program, Emission Standards Program, Emission Standards File Update Program, Regional Strategies Program.

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AIR QUALITY IMPLEMENTATION PLANNING PROGRAM

NOVEMBER 1970

Prepared for

Environmental Protection Agency
National Air Pollution Control Administration
Washington, D. C.

TRW SYSTEMS GROUP
WASHINGTON OPERATIONS

The work upon which this publication is based was performed pursuant to Contract No. PH22-68-60 with the U. S. Public Health Service, Department of Health, Education and Welfare.

PREFACE

In developing the Air Quality Implementation Planning Program described in this manual, TRW Systems Group has been guided by the intent of the Clean Air Act, as amended, as well as by extensive direct communication with National Air Pollution Control Administration personnel.

We are particularly indebted to Jack R. Farmer, Philip Bierbaum and Jerome B. Mersch, of the Division of Abatement, for their overall guidance in this project. The Office of Program Development provided the original impetus to the systems analysis approach to air pollution control through their sponsorship of the Regional Air Pollution Analysis Project (RAPA). The basic structure of the Air Quality Implementation Planning Program evolved as a part of the RAPA project.

A large number of TRW people participated in this project; those with the most direct involvement are listed below.

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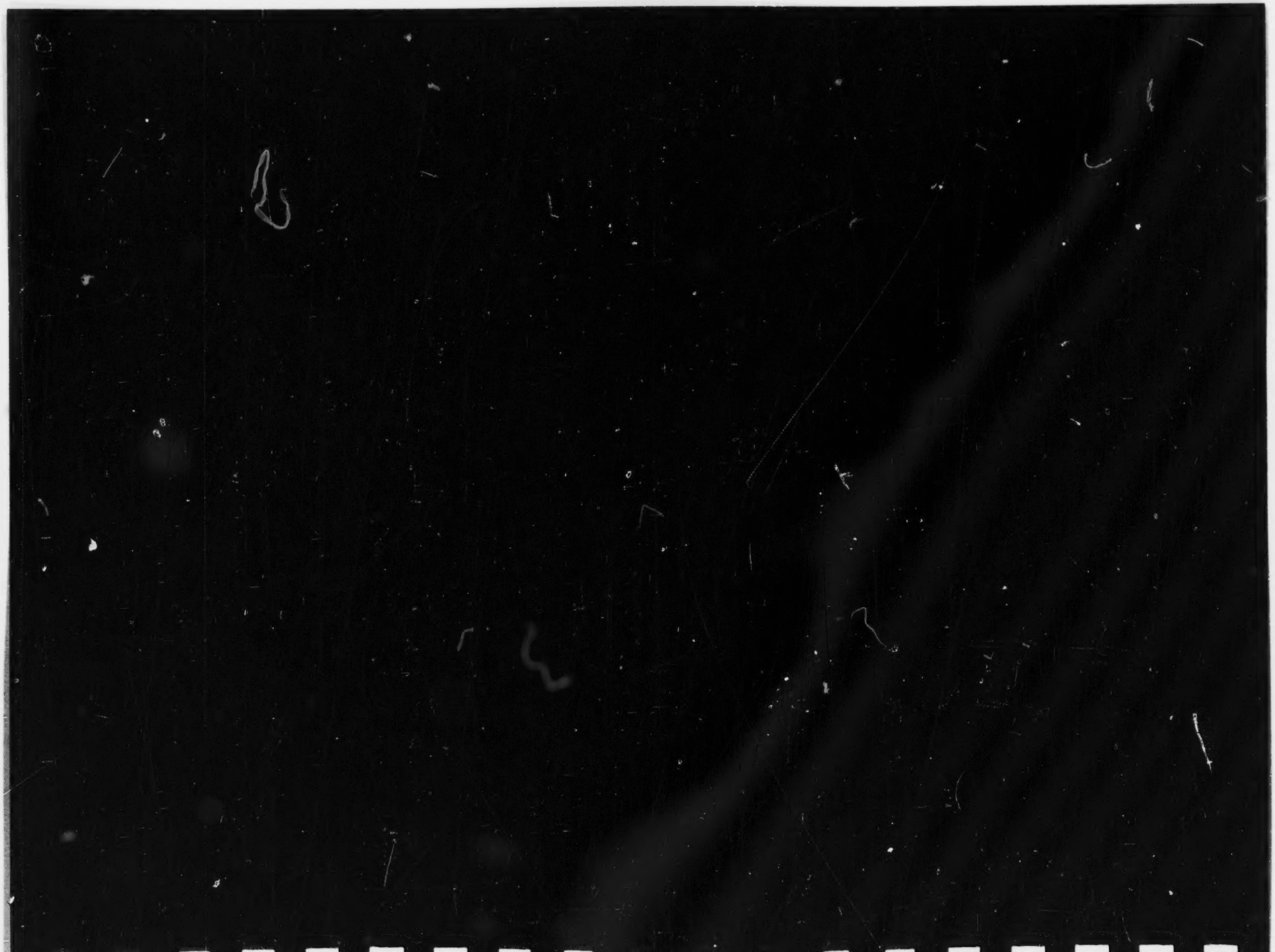

1.0 INTRODUCTION

This volume is designed to be used in conjunction with Volume I to assist the user in the installation, verification, and maintenance of the component programs of the Implementation Planning Program. The component program consists of the following:

- Source File Maintenance Program
- Air Pollutant Concentration Program (APCP)
- Source Contribution File Merge Program
- Control Cost Program
- Control Cost File Update Program (CCUPD)
- Emission Standards Program (ESTAND)
- Emission Standards File Update Program (ESUPD)
- Regional Strategies Program (RSTRAT)

The program names and abbreviations (or their derivatives) are used interchangeably throughout this volume.

Chapter 2 consists of a physical description of the installation test case, the completed data forms used to set up the input card data set, and the output obtained from each of the executed programs.

Chapter 3 contains the description, flow charts and program listings for each program.

Chapter 4 contains several copies of each special data form designed for use with this program. These forms are full size and may be duplicated for general use.

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2.0 INSTALLATION TEST CASE

2.1 Test Case Description

The objectives of the test case are: (1) to provide the user with examples of completed data forms and (2) to provide data from the executed programs for comparison with program output as obtained at the users facility. To accomplish these objectives, a physical description of the test case is presented, followed by the completed data forms and resulting program output. No "analysis" of the test case results is attempted.

Figure 2-1 is a map of the test case region (Central City Region 907) illustrating its two political jurisdictions and coordinate system. Table 2-1 defines the air quality monitoring network data required by the program. The applicable meteorological conditions are given in Table 2-2.

2.2 Source Data Management Program Test

The emission inventory consists of 26 point and 29 area sources. The inventory data is shown in the completed "point" and "area" source data forms in Figure 2-2. Figure 2-3 displays the program output for a "create and list" run using the data of Figure 2-2. The action cards required for this type of run are described in Section 7.2 of Volume I.

2.3 Air Pollutant Concentration (APCP) Program Test

This program is first calibrated, using the measured ambient air quality data of Table 2-1; then the calibrated program is used to determine the pollutant concentration values at selected receptor points throughout the region. The test case receptor system consists of 80 grid points and 26 individual receptors. The calibration and calibrated run operations are performed by the following two runs:

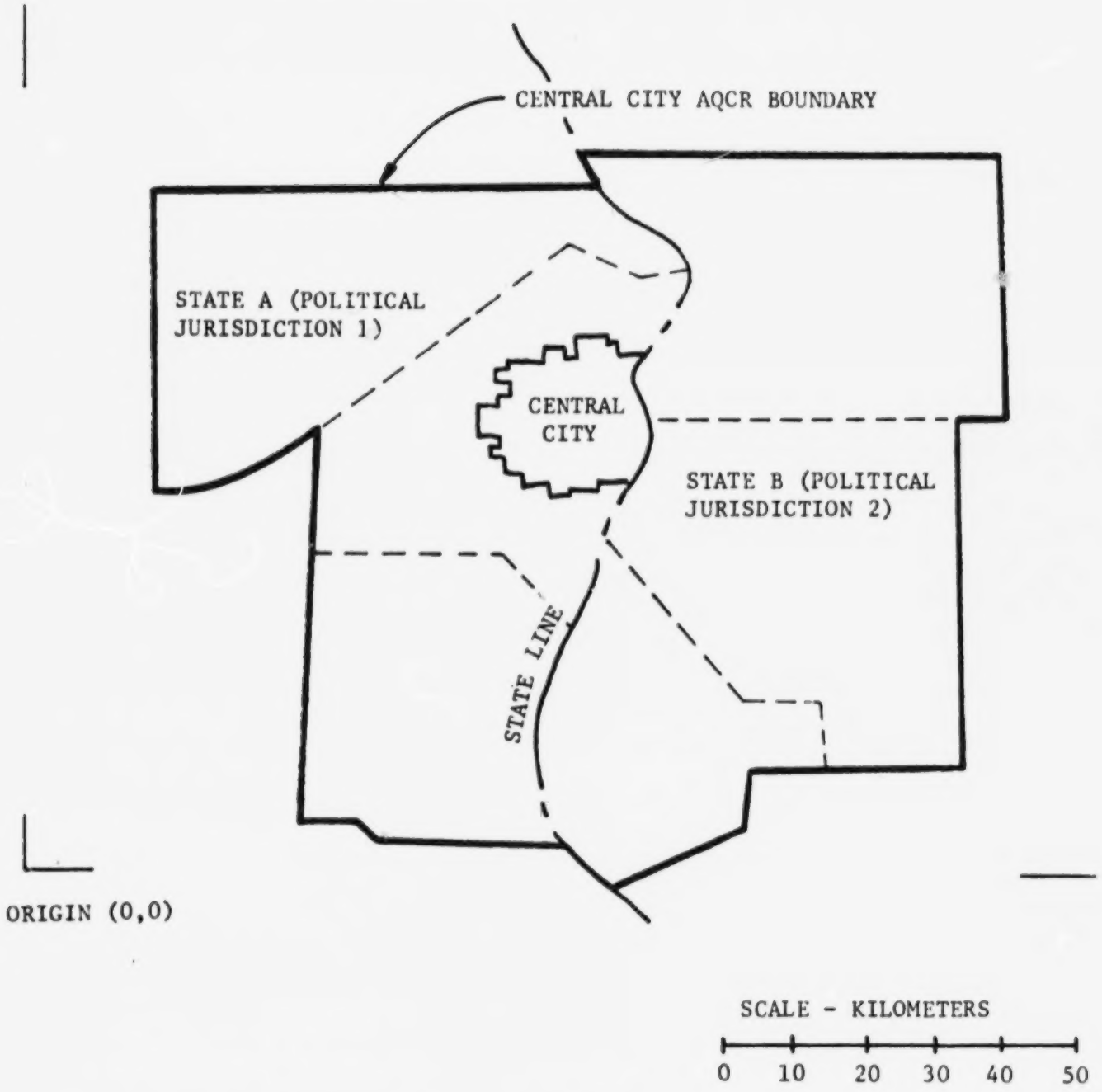

Figure 2-1. Central City Air Quality Control Region.

Table 2-1

Sampling Station Data

	Station Location (Kilometers)		Pollutant Concentration (Arithmetic Mean-$\mu g/m^3$)		Geometric Standard Deviation	
	X	Y	SO_2	Particulates	SO_2	Particulates
1	79.2	63.5	37.0	15.0	1.96	1.82
2	65.0	56.3	31.0	-	2.31	-
3	83.9	71.0	31.0	-	2.04	-
4	88.6	68.9	51.0	-	1.82	-
5	90.3	72.6	28.0	-	2.15	-
6	81.9	96.5	19.0	-	2.33	-
7	126.8	85.2	20.0	-	2.40	-
8	75.0	17.1	51.0	-	1.91	-
9	82.1	54.9	80.0	-	1.79	-
10	60.0	71.1	-	8.0	-	2.01
11	88.5	74.6	-	30.0	-	1.67
12	91.5	90.0	-	11.0	-	1.94
13	90.0	65.3	-	27.0	-	1.72
14	75.2	53.5	-	13.0	-	1.87
15	70.5	23.0	-	20.0	-	1.75
16	71.2	9.5	-	10.0	-	1.99

Average Annual Background Pollutant Concentration (Micrograms/cubic Meter):

SO_2 = 1.0

Particulates = 2.0

Table 2-2

Central City Meteorological Conditions

- Average Annual Ambient Temperature = 288.0 Degrees Kelvin.
- Average Annual Ambient Pressure = 1000 millibars
- Average Annual Mixing Height = 1000 meters
- Annual Stability Wind Rose Date:

Stability 1 (Very Unstable) - Zero occurrences for all wind direction and wind speed categories

Stability 2 (Moderately Unstable)

	Wind Speed (Knots)					
Direction	0-3	4-6	7-10	11-16	17-21	>21
N	.00046	.00046	.0	.0	.0	.0
NNE	.0	.0	.0	.0	.0	.0
NE	.0	.00046	.0	.0	.0	.0
ENE	.00046	.0	.0	.0	.0	.0
E	.00092	.00046	.00046	.0	.0	.0
ESE	.00092	.0	.0	.0	.0	.0
SE	.00092	.00046	.0	.0	.0	.0
SSE	.0	.0	.0	.0	.0	.0
S	.0	.0	.0	.0	.0	.0
SSW	.0	.0	.0	.0	.0	.0
SW	.0	.0	.0	.0	.0	.0
WSW	.00092	.0	.0	.0	.0	.0
W	.0	.00046	.0	.0	.0	.0
WNW	.00046	.0	.0	.0	.0	.0
NW	.0	.0	.0	.0	.0	.0
NNW	.0	.0	.0	.0	.0	.0

Stability 3 (Slightly Unstable)

N	.00046	.0	.00323	.0	.0	.0
NNE	.0	.00046	.00092	.0	.0	.0
NE	.0	.0	.00092	.0	.0	.0
ENE	.00092	.00092	.00461	.0	.0	.0
E	.00185	.00277	.00415	.00046	.0	.0
ESE	.0	.00369	.00461	.0	.0	.0
SE	.00138	.00323	.00277	.0	.0	.0
SSE	.0	.00277	.00092	.0	.0	.0
S	.0	.00092	.00092	.0	.0	.0
SSW	.0	.00185	.00092	.0	.0	.0
SW	.0	.00185	.00092	.0	.0	.0

Table 2-2 (Continued)

Wind Speed (Knots)

Direction	0-3	4-6	7-10	11-16	17-21	>21
Stability 3 (Slightly Unstable)(Con'd.)						
WSW	.00046	.00138	.00092	.0	.0	.0
W	.0	.00138	.00092	.0	.0	.0
WNW	.00046	.00046	.00092	.0	.0	.0
NW	.0	.00092	.00046	.0	.0	.0
NNW	.0	.00138	.00138	.0	.0	.0
Stability 4 (Neutral)						
N	.0	.00185	.05258	.03828	.00369	.0
NNE	.0	.00092	.01338	.01568	.00277	.0
NE	.0	.00092	.01061	.01476	.00046	.0
ENE	.0	.00369	.01061	.01061	.00046	.0
E	.0	.00560	.01476	.01384	.00554	.00138
ESE	.0	.00277	.01015	.05074	.01107	.00138
SE	.0	.00138	.02168	.04105	.00507	.00046
SSE	.0	.00185	.01753	.02445	.00277	.0
S	.0	.00046	.01476	.02998	.00231	.0
SSW	.0	.00138	.00876	.00876	.0	.0
SW	.0	.00185	.00185	.0	.0	.0
WSW	.0	.00092	.00876	.00046	.0	.0
W	.0	.00415	.01292	.00692	.0	.0
WNW	.0	.00369	.01568	.01107	.00185	.0
NW	.0	.00231	.02445	.01614	.00277	.0
NNW	.0	.00277	.02998	.03275	.00231	.0
Stability 5 (Stable)						
N	.00507	.01245	.02122	.0	.0	.0
NNE	.00046	.00277	.00461	.0	.0	.0
NE	.00092	.00507	.00277	.0	.0	.0
ENE	.00323	.00784	.00415	.0	.0	.0
E	.01061	.01614	.00554	.0	.0	.0
ESE	.00554	.01614	.01245	.0	.0	.0
SE	.00138	.00692	.00461	.0	.0	.0
SSE	.00092	.00507	.00507	.0	.0	.0
S	.00277	.00461	.00231	.0	.0	.0
SSW	.00507	.00646	.0	.0	.0	.0
SW	.00092	.00369	.0	.0	.0	.0
WSW	.00185	.00369	.0	.0	.0	.0
W	.00185	.00646	.00046	.0	.0	.0
WNW	.00554	.01199	.00369	.0	.0	.0
NW	.00876	.01107	.00369	.0	.0	.0
NNW	.00323	.01153	.00692	.0	.0	.0

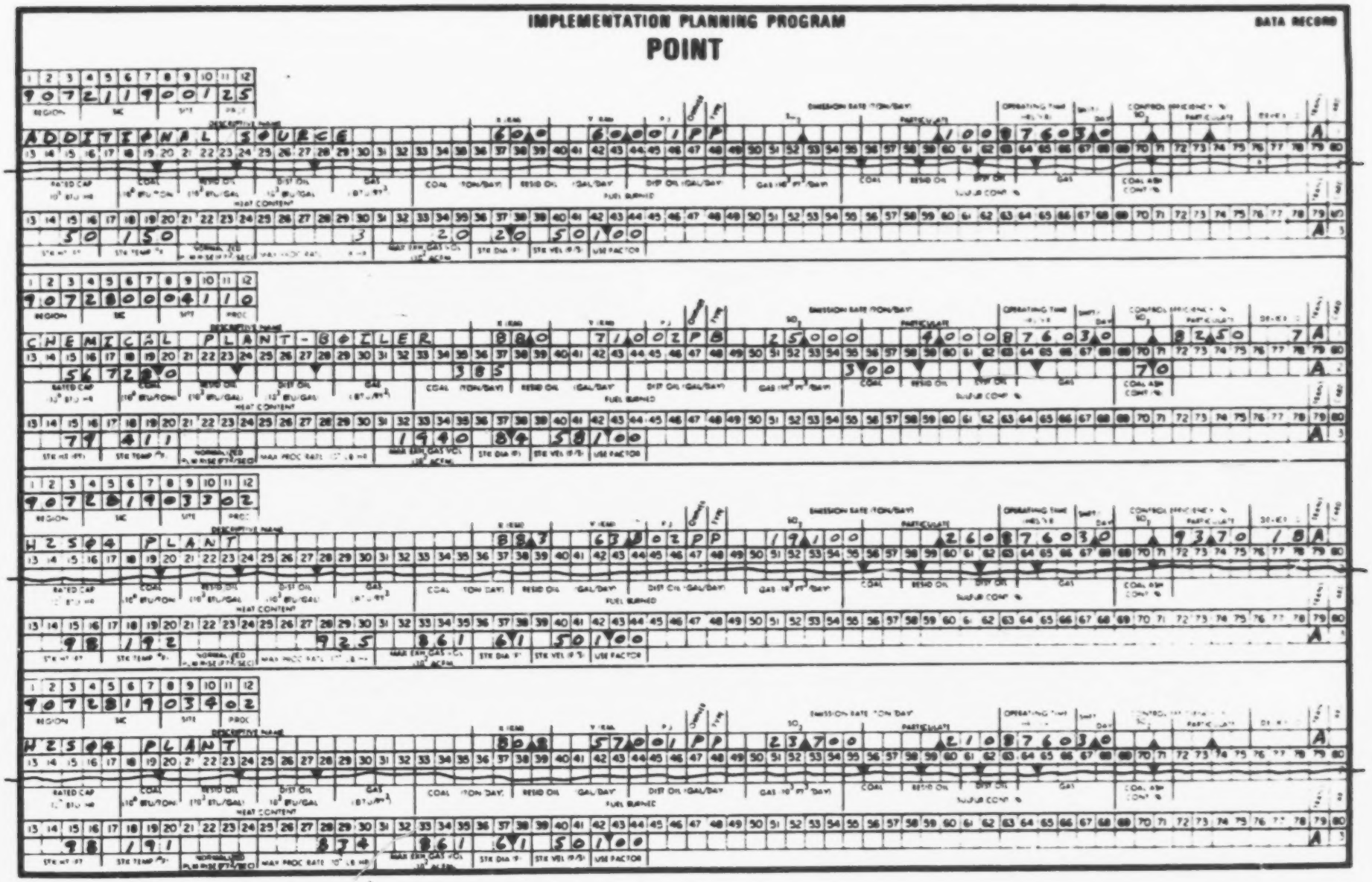

Figure 2-2. Source Data Management Program Input.

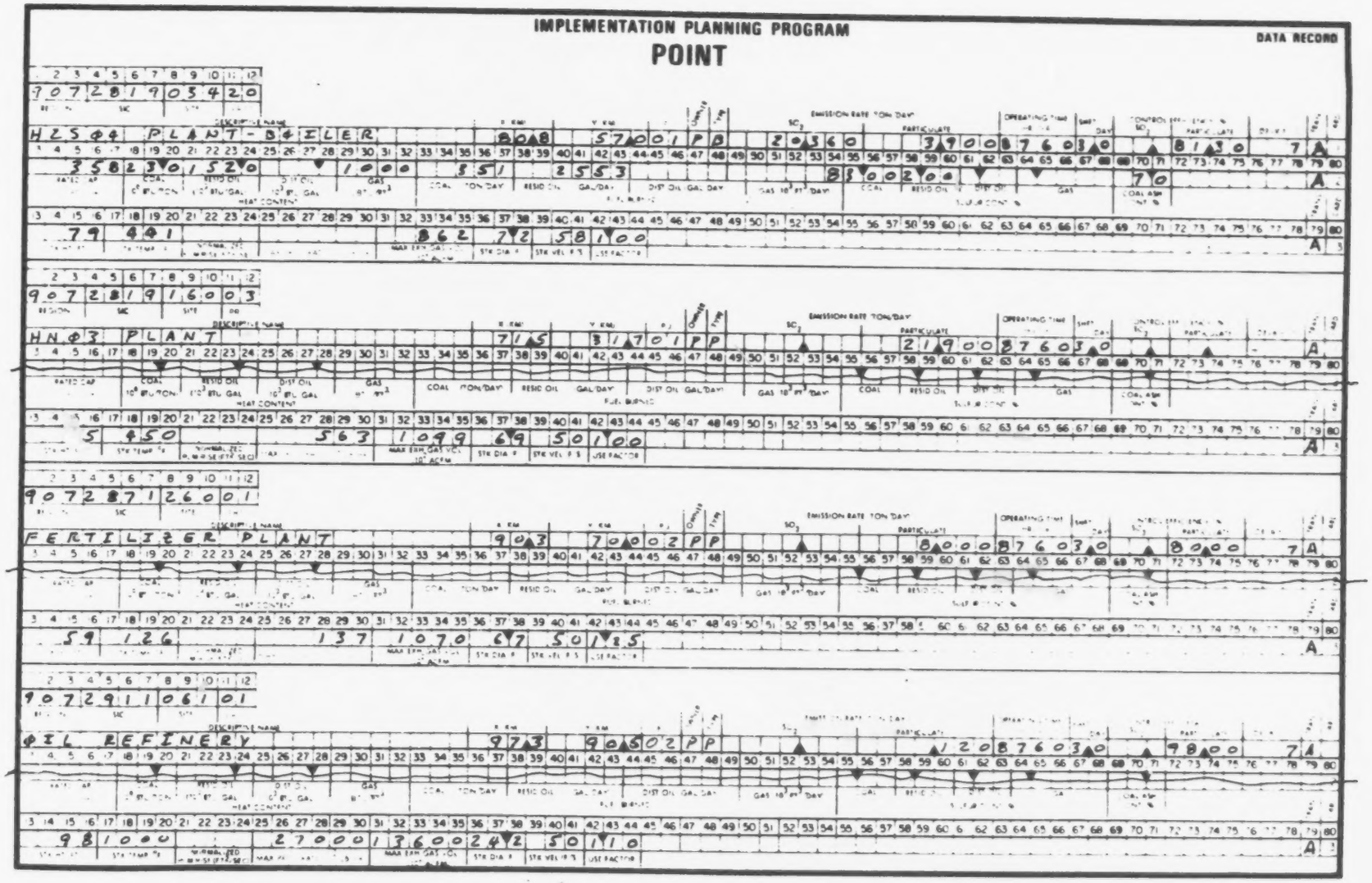

Figure 2-2. (Continued)

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IMPLEMENTATION PLANNING PROGRAM

DATA RECORD

POINT

907295 1 5001

DESCRIPTIVE NAME: ASPHALT BATCHING

X (KM): 680 Y (KM): 5430 PU: 1 OPTYP: P TYP: P

EMISSION RATE TON/DAY: PARTICULATE: 970

OPERATING TIME: 1460 SHIFT/DAY: 5

CONTROL EFFICIENCY %: SO_2 / PARTICULATE

TRANS: A

RATED CAP: 59

COAL: 10^6 BTU/TON

RESID OIL: 10^3 BTU/GAL

DIST OIL: 10^3 BTU/GAL

HEAT CONTENT

GAS: BTU/FT^3

STK HT FT: 250

STK TEMP °F: 550

NORMALIZED EXIT VELOCITY FT/SEC

MAX PROC RATE LB/HR

COAL TON/DAY: 269

RESID OIL GAL/DAY: 3100

DIST OIL GAL/DAY

FUEL BURNED

GAS 10^3 FT^3/DAY

MAX EXH GAS VOL 10^3 ACFM: 58

STK DIA FT: 100

STK VEL FT/S

USE FACTOR

SULFUR CONT %: COAL / RESID OIL / DIST OIL / GAS

COAL ASH CONT %

TRANS: A

907324 1 1 0001

DESCRIPTIVE NAME: CEMENT MFG

X (KM): 852 Y (KM): 7890 PU: 1 OPTYP: P TYP: P

EMISSION RATE TON/DAY: PARTICULATE: 2790

OPERATING TIME: 8760 SHIFT/DAY: 3

CONTROL EFFICIENCY %: SO_2 / PARTICULATE: 9800

TRANS: A

RATED CAP: 200

COAL: 10^6 BTU/TON: 550

RESID OIL: 10^3 BTU/GAL

DIST OIL: 10^3 BTU/GAL

HEAT CONTENT

GAS: BTU/FT^3

STK HT FT: 850

STK TEMP °F: 290

NORMALIZED EXIT VELOCITY FT/SEC: 113

MAX PROC RATE LB/HR

MAX EXH GAS VOL 10^3 ACFM: 50

STK DIA FT: 100

STK VEL FT/S

USE FACTOR

SULFUR CONT %: COAL / RESID OIL / DIST OIL / GAS

COAL ASH CONT %: 10

TRANS: A

907329 5 0 5101

DESCRIPTIVE NAME: ROCK SAND AND GRAVEL

X (KM): 831 Y (KM): 9120 PU: 1 OPTYP: P TYP: P

EMISSION RATE TON/DAY: PARTICULATE: 1980

OPERATING TIME: 2920 SHIFT/DAY: 10

CONTROL EFFICIENCY %: SO_2 / PARTICULATE

TRANS: A

RATED CAP: 39

COAL: 10^6 BTU/TON: 70

RESID OIL: 10^3 BTU/GAL

DIST OIL: 10^3 BTU/GAL

HEAT CONTENT

GAS: BTU/FT^3

STK HT FT: 4770

STK TEMP °F

NORMALIZED EXIT VELOCITY FT/SEC

MAX PROC RATE LB/HR

COAL TON/DAY

RESID OIL GAL/DAY

DIST OIL GAL/DAY

FUEL BURNED

GAS 10^3 FT^3/DAY

MAX EXH GAS VOL 10^3 ACFM: 1875

STK DIA FT: 70

STK VEL FT/S: 58

USE FACTOR: 100

SULFUR CONT %: COAL / RESID OIL / DIST OIL / GAS

COAL ASH CONT %

TRANS: A

907331 2 1 1101

DESCRIPTIVE NAME: STEEL MILL-BLAST FURN

X (KM): 921 Y (KM): 7420 PU: 2 OPTYP: P TYP: P

EMISSION RATE TON/DAY: PARTICULATE: 10000

OPERATING TIME: 8760 SHIFT/DAY: 3

CONTROL EFFICIENCY %: SO_2 / PARTICULATE: 9970

TRANS: A

RATED CAP: 98

COAL: 10^6 BTU/TON: 397

RESID OIL: 10^3 BTU/GAL

DIST OIL: 10^3 BTU/GAL

HEAT CONTENT

GAS: BTU/FT^3

STK HT FT: 2880

STK TEMP °F

NORMALIZED EXIT VELOCITY FT/SEC

MAX PROC RATE LB/HR

COAL TON/DAY

RESID OIL GAL/DAY

DIST OIL GAL/DAY

FUEL BURNED

GAS 10^3 FT^3/DAY

MAX EXH GAS VOL 10^3 ACFM: 6000

STK DIA FT: 149

STK VEL FT/S: 58

USE FACTOR: 100

SULFUR CONT %: COAL / RESID OIL / DIST OIL / GAS

COAL ASH CONT %

TRANS: A

Figure 2-2. (Continued)

NOT REPRODUCIBLE

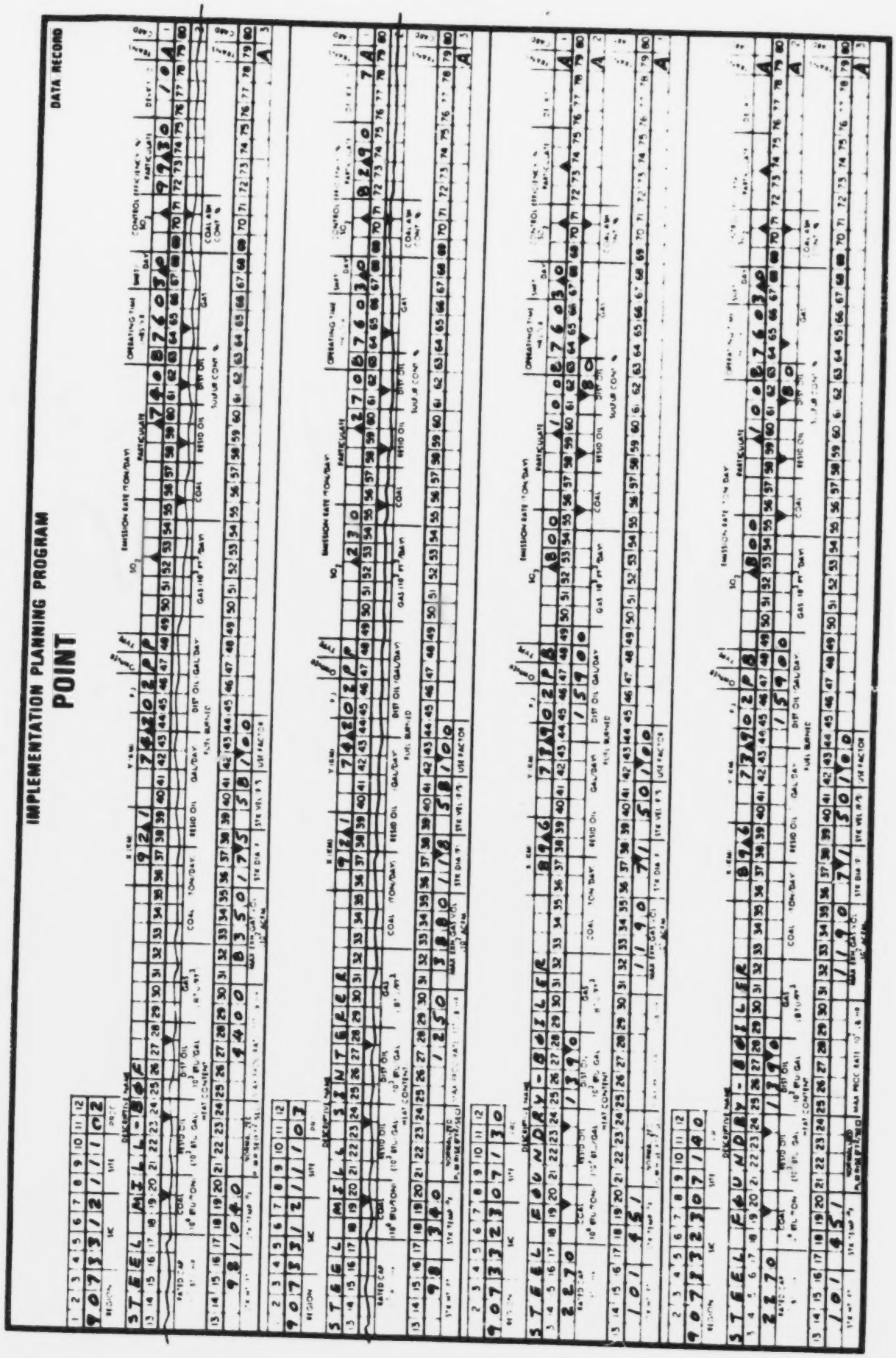

Figure 2-2. (Continued)

NOT REPRODUCIBLE

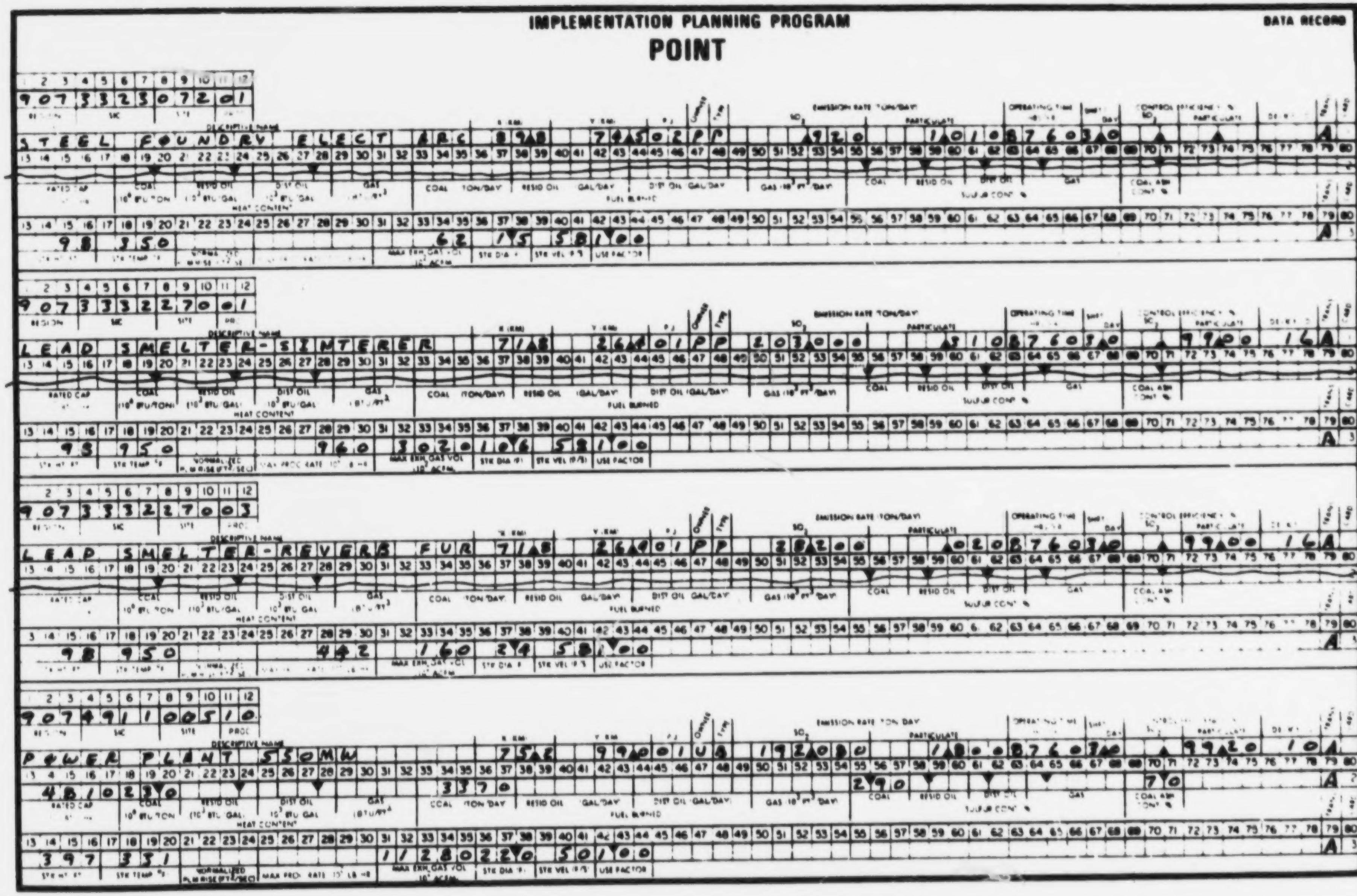

Figure 2-2. (Continued)

IMPLEMENTATION PLANNING PROGRAM — DATA RECORD

POINT

REGION	SIC	SITE	PROC	DESCRIPTIVE NAME	X (KM)	Y (KM)	PJ	COMBUST. TYPE	EMISSION RATE (TON/DAY) SO_2	PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/DAY	CONTROL EFFICIENCY % SO_2	PARTICULATE	DEVICE ID	TRANS CARD
907	49110	06	20	POWER PLANT 55MW	130.0	845.0		UB	35.90	42.00	8760	330				A 1

RATED CAP (10^6 BTU/HR)	HEAT CONTENT: COAL (10^6 BTU/TON)	RESID OIL (10^3 BTU/GAL)	DIST OIL (10^3 BTU/GAL)	GAS (BTU/FT^3)	FUEL BURNED: COAL (TON/DAY)	RESID OIL (GAL/DAY)	DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	SULFUR CONT (%): COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD
									2.90				7.0		A 2

STK HT (FT)	STK TEMP (°F)	NORMALIZED PLUM RISE (FT/SEC)	MAX PROC RATE (10^3 LB/HR)	MAX EXH GAS VOL (10^3 ACFM)	STK DIA (FT)	STK VEL (FT/S)	USE FACTOR
397	341			211	30	50.125	

REGION	SIC	SITE	PROC	DESCRIPTIVE NAME	X (KM)	Y (KM)	PJ	COMBUST. TYPE	EMISSION RATE (TON/DAY) SO_2	PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/DAY	CONTROL EFFICIENCY % SO_2	PARTICULATE	DEVICE ID	TRANS CARD
907	49110	07	30	POWER PLANT 923MW	769	420		UB	377.200	81.00	8760	330		97.50	10	A 1

RATED CAP (10^6 BTU/HR)	HEAT CONTENT: COAL (10^6 BTU/TON)	RESID OIL (10^3 BTU/GAL)	DIST OIL (10^3 BTU/GAL)	GAS (BTU/FT^3)	FUEL BURNED: COAL (TON/DAY)	RESID OIL (GAL/DAY)	DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	SULFUR CONT (%): COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD
3072			1000	1000	661.6			63.40	2.90				7.0		A 2

STK HT (FT)	STK TEMP (°F)	NORMALIZED PLUM RISE (FT/SEC)	MAX PROC RATE (10^3 LB/HR)	MAX EXH GAS VOL (10^3 ACFM)	STK DIA (FT)	STK VEL (FT/S)	USE FACTOR
397	310	350		2640		50.100	

REGION	SIC	SITE	PROC	DESCRIPTIVE NAME	X (KM)	Y (KM)	PJ	COMBUST. TYPE	EMISSION RATE (TON/DAY) SO_2	PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/DAY	CONTROL EFFICIENCY % SO_2	PARTICULATE	DEVICE ID	TRANS CARD
907	49531	30	01	ENGINEERING-MUNICIPAL	968	720	01	LS	300	255.0	8760	330				A 1

RATED CAP (10^6 BTU/HR)	HEAT CONTENT: COAL (10^6 BTU/TON)	RESID OIL (10^3 BTU/GAL)	DIST OIL (10^3 BTU/GAL)	GAS (BTU/FT^3)	FUEL BURNED: COAL (TON/DAY)	RESID OIL (GAL/DAY)	DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	SULFUR CONT (%): COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD

STK HT (FT)	STK TEMP (°F)	NORMALIZED PLUM RISE (FT/SEC)	MAX PROC RATE (10^3 LB/HR)	MAX EXH GAS VOL (10^3 ACFM)	STK DIA (FT)	STK VEL (FT/S)	USE FACTOR
151	501		254	2120	96	50.100	

REGION	SIC	SITE	PROC	DESCRIPTIVE NAME	X (KM)	Y (KM)	PJ	COMBUST. TYPE	EMISSION RATE (TON/DAY) SO_2	PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/DAY	CONTROL EFFICIENCY % SO_2	PARTICULATE	DEVICE ID	TRANS CARD
907	49531	31	02	DUMP	765	708	01	LS	220	330	2912	10				A 1

RATED CAP (10^6 BTU/HR)	HEAT CONTENT: COAL (10^6 BTU/TON)	RESID OIL (10^3 BTU/GAL)	DIST OIL (10^3 BTU/GAL)	GAS (BTU/FT^3)	FUEL BURNED: COAL (TON/DAY)	RESID OIL (GAL/DAY)	DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	SULFUR CONT (%): COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD

STK HT (FT)	STK TEMP (°F)	NORMALIZED PLUM RISE (FT/SEC)	MAX PROC RATE (10^3 LB/HR)	MAX EXH GAS VOL (10^3 ACFM)	STK DIA (FT)	STK VEL (FT/S)	USE FACTOR
99			103				100

Figure 2-2. (Continued)

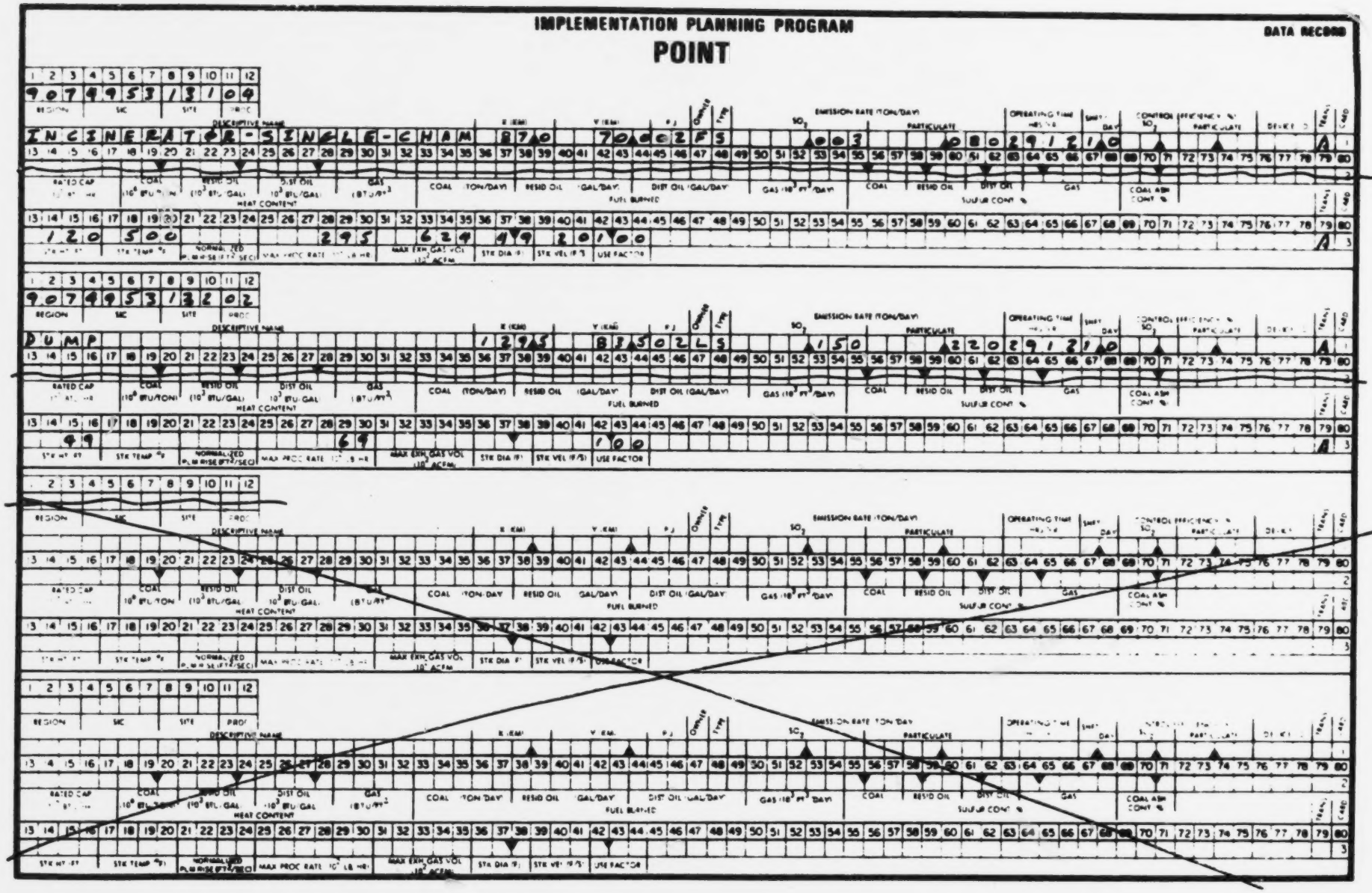

Figure 2-2. (Continued)

REGION SIC

1	2	3	4	5	6	7
9	0	7	9	9	9	9

IMPLEMENTATION PLANNING PROGRAM

AREA

DATA RECORD

SITE				PROC	LOCATION X (KM)				LOCATION Y (KM)					AREA (KM^2)				POL JUR	STACK HEIGHT (FT.)				EMISSION RATE SO2 (TON/DAY)							EMISSION RATE PART. (TON/DAY)							ACTION
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	79
0	0	1	0	0		4	2	0			1	0	0	4	0	0	0		1				0					0	8	0					0	1	0	A
0	0	2	0	0		4	2	0			3	0	0	4	0	0	0		1				0					1	0	0					0	2	3	A
0	0	3	0	0		4	2	0			5	0	0	4	0	0	0		1			3	3					5	0	0					1	0	0	A
0	0	4	0	0		4	2	0			7	0	0	4	0	0	0		1			3	3					5	5	0					1	2	0	A
0	0	5	0	0		6	2	0			1	0	0	4	0	0	0		1				0					0	6	0					0	1	5	A
0	0	6	0	0		6	2	0			1	0	0	4	0	0	0		2				0					0	6	0					0	1	5	A
0	0	7	0	0		6	2	0			3	0	0	4	0	0	0		1			3	3					7	0	0					1	9	0	A
0	0	8	0	0		6	2	0			3	0	0	1	0	0	0		2			3	3					1	0	0					0	2	0	A
0	0	9	0	0		6	2	0			5	0	0	1	0	0	0		1			3	3			6	4	0	0				1	7	0	0	A
0	1	0	0	0		7	2	0			5	0	0	1	0	0	0		1			3	3			8	2	0	0				2	3	0	0	A
0	1	1	0	0		6	2	0			6	0	0	1	0	0	0		1			3	3			7	1	0	0				1	8	0	0	A
0	1	2	0	0		7	2	0			6	0	0	1	0	0	0		1			6	6	1		9	6	0	0				5	0	0	0	A
0	1	3	0	0		6	2	0			7	0	0	1	0	0	0		1			3	3			3	5	0	0				1	0	0	0	A
0	1	4	0	0		7	2	0			7	0	0	4	0	0	0		1			3	3			4	2	0	0				1	1	0	0	A
0	1	5	0	0		6	2	0			8	0	0	4	0	0	0		1			3	3				5	0	0					1	1	0	A
0	1	6	0	0		8	2	0			1	0	0	4	0	0	0		2			3	3				0	7	0					0	1	0	A
0	1	7	0	0		8	2	0			3	0	0	1	0	0	0		2			3	3				3	0	0					0	1	5	A
0	1	8	0	0		8	2	0			5	0	0	1	0	0	0		1			3	3			1	2	5	0					2	5	0	A
0	1	9	0	0		8	2	0			5	0	0	1	0	0	0		2			3	3			3	7	5	0					7	5	0	A
0	2	0	0	0		8	2	0			6	0	0	1	0	0	0		1			3	3			5	0	0	0				1	6	0	0	A
0	2	1	0	0		8	2	0			6	0	0	1	0	0	0		2			3	3			5	0	0	0				1	6	0	0	A
0	2	2	0	0		8	2	0			7	0	0	1	0	0	0		1			3	3			2	8	9	0					7	0	0	A
0	2	3	0	0		8	2	0			7	0	0	1	0	0	0		2			3	3			1	2	0	0					3	0	0	A
0	2	4	0	0		9	2	0			7	0	0	1	0	0	0		2			3	3			3	5	0	0					9	0	0	A
0	2	5	0	0		8	2	0			8	0	0	4	0	0	0		1			3	3				1	8	0					0	4	0	A

Figure 2-2. (Continued)

REGION | MC

1	2	3	4	5	6	7
9	0	7	9	9	9	9

IMPLEMENTATION PLANNING PROGRAM

DATA RECORD

AREA

SITE				PROC	LOCATION X (KM)				LOCATION Y (KM)				AREA (KM^2)				POL JUR		STACK HEIGHT (FT.)				EMISSION RATE SO2 (TON/DAY)							EMISSION RATE PART. (TON/DAY)							ACTION
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	79
0	2	6	0	0		8	2	0			8	0	0	4	0	0	0		2			3	3					4	6	0					0	9	0	A
0	2	7	0	0	1	0	2	0			3	0	0	4	0	0	0		2			3	3					2	0	0					0	5	0	A
0	2	8	0	0		9	2	0			5	0	0	4	0	0	0		2			3	3					7	5	0					1	5	0	A
0	2	9	0	0	1	0	2	0			7	0	0	4	0	0	0		2			3	3					5	0	0					1	0	0	A

Figure 2-2. (Continued)

SOURCE FILE FOR CENTRAL CITY REGION 907
CREATE DATE DECEMBER 23, 1970 UPDATE DATE

OUTPUT UNITS

SOURCE ID	DESCRIPTIVE NAME	LOC X KM	LOC Y KM	PJ --	OWNER -	TYPE -	SO2EMRAT TONS/DAY	PARTEMRT TONS/DAY	OP TIME HRS/YR	SHIFTS -	SO2CONEFF %	PARTCONEFF %	DEVICE ID ---
RATED CAPCTY BTU/HOUR	COAL HEAT BTU/TON	R OILHEAT BTU/GAL	D OILHEAT BTU/GAL	GASHEAT BTU/CU FT	COALBRN TON/DAY	R OILBRN GAL/DAY	D OILBRN GAL/DAY	GAS BRN CU FT/DAY	COALSC %	R OILSC %	D OILSC %	GAS SC %	COAL ASH %
STACK HEIGHT METERS	STACK TEMPERATURE DEG K	PLUME RISE M SQR/SEC	MAX PROCESS RATE LB/HR	MAX EXHAUST GAS VOL ACFM	STACK DIAMETER METERS	STACK VELOC M/SEC	USE FACT --						

POINT SOURCES

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907211700125	ADDITIONAL SOURCE	60.0	60.0	01	P	P	.000	.100	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.0C00CE+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
15.240	338.600	.000	300	2000	.60960	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907260004110	CHEMICAL PLANT-BOILER	88.0	71.0	02	P	B	25.000	4.000	8760	3.0	.0	82.50	7

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+5.67000E+08	+2.800E+07	+0.0000E+96	+0.0000E+96	0	385	0	0	0	3.00	.00	.00	.0000	7.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
24.079	483.716	.000	0	194000	2.56032	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMPT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907281003302	H2SO4 PLANT	88.3	63.8	02	P	P	19.100	.260	8760	3.0	.0	93.70	18

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.00000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
20.870	361.952	.000	92500	86100	1.85928	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMPT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907281003402	H2SO4 PLANT	80.8	57.0	01	P	P	23.700	.210	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.0000CE+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
20.870	361.396	.000	83400	86100	1.85928	15.2400	1.00

Figure 2-3. Source Data Management Program Output.

NOT REPRODUCIBLE

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907281903420	H2SO4 PLANT-BOILER	80.8	57.0	01	P B	20.360	3.900	8760	3.0	.0	81.30	7

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+3.580000E+08	+2.300E+07	+1.5200E+05	+0.0000E+96	1000	351	2553	0	8000	3.00	2.00	.00	.0000	7.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
24.079	500.396	.000	0	86200	2.19456	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907281916003	HNO3 PLANT	71.5	31.7	01	P P	.000	21.900	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
22.860	505.400	.000	56300	109900	2.10312	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907287126001	FERTILIZER PLANT	90.3	70.0	02	P P	.000	8.000	8760	3.0	.0	80.00	7

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
17.983	325.256	.000	13700	107000	2.04216	15.2400	1.25

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907291106101	OIL REFINERY	97.3	90.5	02	P P	.000	.120	8760	3.0	.0	98.00	7

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	811.200	.000	2700000	1360000	7.37616	15.2400	1.10

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907295115001	ASPHALT BATCHING	68.0	54.3	01	P P	.000	.970	1460	.5	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
17.983	394.200	.000	55000	26900	.94488	17.6784	1.00

Figure 2.3. (Continued)

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907324110001	CEMENT MFG	85.2	78.9	01	P	P	.000	2.790	8760	3.0	.0	98.00	10

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
60.960	561.000	.000	859000	298000	3.44424	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907329505101	ROCK SAND AND GRAVEL	83.1	91.2	01	P	P	.000	19.180	2920	1.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
11.887	294.120	.000	477000	187500	2.13360	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907331211101	STEEL MILL-BLAST FURN	92.1	74.2	02	P	P	.000	1.000	8760	3.0	.0	99.70	1

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	475.932	.000	288000	600000	4.54152	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907331211102	STEEL MILL-BOF	92.1	74.2	02	P	P	.000	.740	8760	3.0	.0	99.30	10

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	833.440	.000	440000	835000	5.33400	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907331211103	STEEL MILL SINTERER	92.1	74.2	02	P	P	.230	.270	8760	3.0	.0	82.90	7

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.000000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	444.240	.000	125000	388000	3.59664	17.6784	1.00

Figure 2-3. (Continued)

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907332307130	STEEL FOUNDRY-BOILER	89.6	73.9	02	P B	.800	.100	8760	3.0	.0	.CC	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+2.27000E+09	+0.000E+95	+0.0000E+96	+1.3900E+05	0	0	0	15900	0	.00	.00	.80	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
30.784	505.956	.000	0	119000	2.16408	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907332307140	STEEL FOUNDRY-BOILER	89.6	73.9	02	P B	.800	.100	8760	3.0	.0	.CC	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+2.27000E+09	+0.000E+95	+0.0000E+96	+1.3900E+05	0	0	0	15900	0	.00	.00	.80	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
30.784	505.956	.000	0	119000	2.16408	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907332307201	STEEL FOUNDRY ELECT ARC	89.8	74.5	02	P P	.920	1.010	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.0C000E+97	+0.000E+95	+0.0000E+96	+0.000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	449.800	.000	1100	6200	.45720	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907333227C01	LEAD SMELTER-SINTERER	71.8	26.4	01	P P	203.000	.310	8760	3.0	.0	99.00	16

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.0000E+97	+0.00E+95	+0.0000E+96	+0.00C0E+96	0	0	0	0	0	.00	.00	.CC	.CCCC	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	783.400	.000	96000	302C00	3.23088	17.6784	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907333227003	LEAD SMELTER-REVERB FUR	71.8	26.4	01	P P	28.200	.020	8760	3.0	.0	99.00	16

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.0CC00E+97	+0.000E+95	+0.0000E+96	+0.00C0E+96	0	0	0	0	0	.00	.00	.00	.CCCO	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
29.870	783.400	.000	44200	16000	.73152	17.6784	1.00

Figure 2-3. (Continued)

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907491100510	POWER PLANT 550MW	75.2	99.0	01	U	B	192.080	1.800	8760	3.0	.0	99.20	10

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+4.810COE+09	+2.300E+07	+0.0000E+96	+0.0000E+96	0	3370	0	0	0	2.90	.00	.00	.0000	7.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
121.005	439.236	.000	0	1128000	6.70560	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907491100620	POWER PLANT 55MW	130.0	84.5	02	U	B	3.590	4.200	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+4.810COE+08	+2.300E+07	+0.0000E+96	+0.0000E+96	0	63	0	0	0	2.90	.00	.00	.0000	7.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
121.005	444.796	.000	0	21100	.91440	15.2400	1.25

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907491100730	POWER PLANT 923MW	76.9	4.2	02	U	B	377.200	8.100	8760	3.0	.0	97.50	10

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+8.075COE+09	+2.300E+07	+0.0000E+96	+0.0000E+96	1000	6616	0	0	6340000	2.90	.00	.00	.0000	7.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
121.005	427.560	32.515	0	2640000	.00000	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907495313001	INCINERATOR-MUNICIPAL	86.8	72.0	01	L	S	.300	2.550	8760	3.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.00000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
46.024	533.756	.000	25400	212000	2.92608	15.2400	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907495313102	DUMP	76.5	70.2	01	L	S	.220	.330	2912	1.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.00000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
14.935	255.200	.000	10300	0	.00000	.0000	1.00

Figure 2-3. (Continued)

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907495313104	INCINERATOR-SINGLE-CHAM	87.0	70.0	02	F	S	.003	.080	2912	1.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.00000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
36.576	533.200	.000	29500	62400	1.49352	6.0960	1.00

SOURCE ID	DESCRIPTIVE NAME	LOC X	LOC Y	PJ	OWNER	TYPE	SO2EMRAT	PARTEMRT	OP TIME	SHIFTS	SO2CONEFF	PARTCONEFF	DEVICE ID
907495313202	DUMP	129.5	83.5	02	L	S	.150	.220	2912	1.0	.0	.00	

RATED CAPCTY	COAL HEAT	R OILHEAT	D OILHEAT	GASHEAT	COALBRN	R OILBRN	D OILBRN	GAS BRN	COALSC	R OILSC	D OILSC	GAS SC	COAL ASH
+0.00000E+97	+0.000E+95	+0.0000E+96	+0.0000E+96	0	0	0	0	0	.00	.00	.00	.0000	.0

STACK HEIGHT	STACK TEMPERATURE	PLUME RISE	MAX PROCESS RATE	MAX EXHAUST GAS VOL	STACK DIAMETER	STACK VELOC	USE FACT
14.935	255.200	.000	6900	0	.00000	.0000	1.00

Figure 2-3. (Continued)

NOTE. DATA GIVEN IN CONVERTED UNITS.

AREA SOURCES

SOURCE ID	LOC X(K)	LOC Y(K)	AREA(SQ KM)	PJ	EFFECTIVE STACK HGT(M)	SO2 EMISSION RATE(T/D)	PART EMISSION RATE(T/D)
907999900100	42.0	10.0	400.0	1	.000	.080	.010
907999900200	42.0	30.0	400.0	1	.000	.100	.023
907999900300	42.0	50.0	400.0	1	10.058	.500	.100
907999900400	42.0	70.0	400.0	1	10.058	.550	.120
907999900500	62.0	10.0	400.0	1	.000	.060	.015
907999900600	62.0	10.0	400.0	2	.000	.060	.015
907999900700	62.0	30.0	400.0	1	10.058	.700	.190
907999900800	62.0	30.0	100.0	2	10.058	.100	.020
907999900900	62.0	50.0	100.0	1	10.058	6.400	1.700
907999901000	72.0	50.0	100.0	1	10.058	8.200	2.300
907999901100	62.0	60.0	100.0	1	10.058	7.100	1.800
907999901200	72.0	60.0	100.0	1	20.116	19.600	5.000
907999901300	62.0	70.0	100.0	1	10.058	3.500	1.000
907999901400	72.0	70.0	400.0	1	10.058	4.200	1.100
907999901500	62.0	80.0	400.0	1	10.058	.500	.110
907999901600	82.0	10.0	400.0	2	10.058	.070	.010
907999901700	82.0	30.0	100.0	2	10.058	.300	.015
907999901800	82.0	50.0	100.0	1	10.058	1.250	.250
907999901900	82.0	50.0	100.0	2	10.058	3.750	.750
907999902000	82.0	60.0	100.0	1	10.058	5.000	1.600
907999902100	82.0	60.0	100.0	2	10.058	5.000	1.600
907999902200	82.0	70.0	100.0	1	10.058	2.800	.700
907999902300	82.0	70.0	100.0	2	10.058	1.200	.300
907999902400	92.0	70.0	100.0	2	10.058	3.500	.900
907999902500	82.0	80.0	400.0	1	10.058	.180	.040
907999902600	82.0	80.0	400.0	2	10.058	.460	.090
907999902700	102.0	30.0	400.0	2	10.058	.200	.050
907999902800	92.0	50.0	400.0	2	10.058	.750	.150
907999902900	102.0	70.0	400.0	2	10.058	.500	.100

Figure 2-3. (Continued)

Run 1 of 2

- "Calibrate and Run" option
- Calibrate with data in Table 2-1
- Grid system defined by: 10 columns, 5 rows, 15 kilometer spacing and an origin of 10.0 x 5.0 km.
- 10 individual receptors with locations: 55.0 x 15.0, 75.0 x 30.0, 77.5 x 57.5, 75.0 x 60.0, 82.5 x 60.0, 90.0 x 60.0, 95.0 x 57.5, 65.0 x 70.0, 75.0 x 75.0, 95.0 x 82.5 kilometers
- Excess Tables desired for Ambient Air Quality Standards of: SO_2 = 35.0 $\mu g/m^3$, Particulate = 15.0 $\mu g/m^3$
- Source contribution to the 5 maximum concentration receptors desired

Run 2 of 2

- Calibrated run using calibration constants from Run 1 of 2
- Grid system defined by: 10 colums, 3 rows, 15 kilometer spacing and an origin of 10.0 x 80.0 kilometers
- 16 individual receptors defined by the measuring station locations (in the order shown in Table 2-1)
- Statistical table output desired for the following conditions:

  SO_2: - output at measuring stations (Table 2-1) 1,2,3,4,5,6,7,8,9

  - output for 1.0, 5.0, and 10.0 percentile values

  - Tables desired for averaging times of .5, 1.0, and 3.0 hours

  Particulate: - output at measuring stations (Table 2-1) 1,10,11,12, 13,14,15,16

  - output for .1, 1.0 and 10.0 percentile values

  - Tables desired for averaging times of 1.0, 8.0, and 24.0 hours

- Excess Tables desired
- Source contribution to the 5 maximum concentration receptors desired

Figures 2-4 and 2-5 show the completed data forms and program output, respectively, for Run 1 of 2 and Figures 2-6 and 2-7 represent Run 2 of 2.

DATE
NAME APCP RUN 1 OF 2
PROBLEM NO.
NO. OF CARDS

80 COLUMN FREE KEYPUNCH FORM

PAGE 1 OF 2
PRIORITY
KEYPUNCHED BY
VERIFIED BY

```
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INCRX= 10, INCRY= 5, DELTAX= 15., RBASE= 10.0, 5.0, IDD= 10,
XRECEP= 55.0, 15.0, 75.0, 30.0, 77.5, 57.5, 75.0, 60.0, 82.5, 60.0,
        90.0, 60.0, 95.0, 57.5, 65.0, 70.0, 75.0, 75.0, 95.0, 82.5,
IPUNCH= 1,
IREC= 1,
NSOX= 9, NPART= 8,
SOXAR= 79.2, 61.5, 37.0, 65.0, 56.7, 31.0, 81.9, 71.0, 31.0,
       88.6, 68.9, 51.0, 90.3, 72.6, 20.0, 81.9, 96.5, 19.0,
      126.2, 85.2, 20.0, 75.0, 17.1, 51.0, 82.1, 54.9, 80.0,
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       70.5, 23.0, 20.0, 71.2,  9.5, 10.0,
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        .000046,        .0,             .0,             .0,             .0,             .0,
        .000092,        .000046,        .000046,        .0,             .0,             .0,
        .000092,        .0,             .0,             .0,             .0,             .0,
        .000092,        .000046,        .0,             .0,             .0,             .0,
24*0.,
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        .0,             .000046,        .0,             .0,             .0,             .0,
        .0,             .0,             .0,             .0,             .0,             .0,
12*0.,
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```

Figure 2-4. Air Pollutant Concentration Program Input - Run 1 of 2.

DATE _____
NAME ADCP
PROBLEM NO. _____
NO. OF CARDS _____

80 COLUMN FREE KEYPUNCH FORM

PAGE 2 OF 2
PUNCHED BY _____
KEYPUNCHED BY _____
VERIFIED BY _____

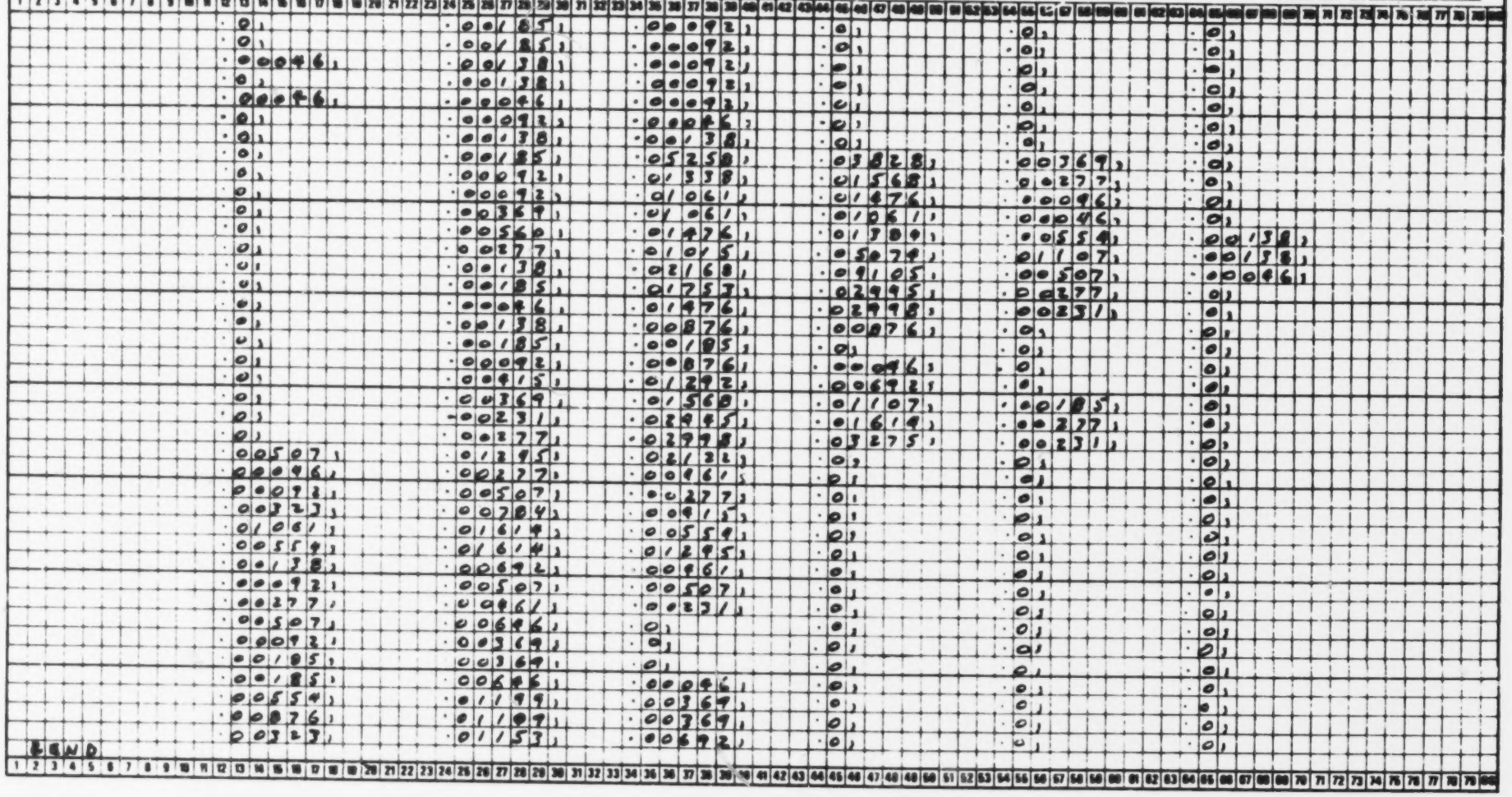

Figure 2-4. (Continued)

```
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 0.0           , 0.45999978E-03, 0.13799998E-02, 0.91999979E-03, 0.0           , 0.0           , 0.45999978E-03, 0.45999978E-03, 0.91999979E-03,
 0.13799998E-02, 0.91999979E-03, 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
 0.0           , 0.0           , 0.0           , 0.0           , 0.91999979E-03, 0.45999978E-03, 0.0           , 0.0           , 0.0           ,
 0.0           , 0.0           , 0.13799998E-02, 0.13799998E-02, 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
 0.18499999E-02, 0.52579999E-01, 0.38279999E-01, 0.36899999E-02, 0.0           , 0.0           , 0.91999979E-03, 0.13379999E-01,
 0.15679996E-01, 0.27699999E-02, 0.0           , 0.0           , 0.91999979E-03, 0.10609999E-01, 0.14759999E-01, 0.45999978E-03,
 0.0           , 0.0           , 0.36899999E-02, 0.10609999E-01, 0.10609999E-01, 0.45999978E-03, 0.0           , 0.0           ,
 0.55999979E-02, 0.14759999E-01, 0.13839997E-01, 0.55399984E-02, 0.13799998E-02, 0.0           , 0.27699999E-02, 0.10149997E-01,
 0.50740000E-01, 0.11069998E-01, 0.13799998E-02, 0.0           , 0.13799998E-02, 0.21679997E-01, 0.41049998E-01, 0.50699972E-02,
 0.45999978E-03, 0.0           , 0.18499999E-02, 0.17529998E-01, 0.24449997E-01, 0.27699999E-02, 0.0           , 0.0           ,
 0.45999978E-03, 0.14759999E-01, 0.29579996E-01, 0.23099999E-02, 0.0           , 0.0           , 0.13799998E-02, 0.87599978E-02,
 0.87599978E-02, 0.0           , 0.0           , 0.0           , 0.18499999E-02, 0.18499999E-02, 0.0           , 0.0           ,
 0.0           , 0.0           , 0.91999979E-03, 0.87599978E-02, 0.45999978E-03, 0.0           , 0.0           , 0.0           ,
 0.41499995E-02, 0.12920000E-01, 0.69195987E-02, 0.0           , 0.0           , 0.0           , 0.36899999E-02, 0.15679996E-01,
 0.11069998E-01, 0.18499999E-02, 0.0           , 0.0           , 0.23099999E-02, 0.24449997E-01, 0.16139999E-01, 0.27699999E-02,
```

Figure 2-5. Air Pollutant Concentration Program Output - Run 1 of 2.

```
0.0           , 0.0           , 0.27699999E-02, 0.29979996E-01, 0.32749999E-01, 0.23099999E-02, 0.0           , 0.50699972E-02,
0.12449998E-01, 0.21219999E-01, 0.0           , 0.0           , 0.0           , 0.45999978E-03, 0.27699999E-02, 0.46099983E-02,
0.0           , 0.0           , 0.0           , 0.91999979E-03, 0.50699972E-02, 0.27699999E-02, 0.0           , 0.0           ,
0.0           , 0.32299999E-02, 0.78399964E-02, 0.41499995E-02, 0.0           , 0.0           , 0.0           , 0.10609999E-01,
0.16139999E-01, 0.55399984E-02, 0.0           , 0.0           , 0.0           , 0.55399984E-02, 0.16139999E-01, 0.12449998E-01,
0.0           , 0.0           , 0.0           , 0.13799998E-02, 0.69199987E-02, 0.46099983E-02, 0.0           , 0.0           ,
0.0           , 0.91999979E-03, 0.50699972E-02, 0.50699972E-02, 0.0           , 0.0           , 0.0           , 0.27699999E-02,
0.46099983E-02, 0.23099999E-02, 0.0           , 0.0           , 0.0           , 0.50699972E-02, 0.64599998E-02, 0.0           ,
0.0           , 0.0           , 0.0           , 0.91999979E-03, 0.36899999E-02, 0.0           , 0.0           , 0.0           ,
0.0           , 0.18499999E-02, 0.36899999E-02, 0.0           , 0.0           , 0.0           , 0.0           , 0.18499999E-02,
0.64599998E-02, 0.45999978E-03, 0.0           , 0.0           , 0.0           , 0.55399984E-02, 0.11990000E-01, 0.36899999E-02,
0.0           , 0.0           , 0.0           , 0.87599978E-02, 0.11069998E-01, 0.36899999E-02, 0.0           , 0.0           ,
0.0           , 0.32299999E-02, 0.11529997E-01, 0.69199987E-02, 0.0           , 0.0           , 0.0           ,TA=  288.00000    ,
PA=  1000.0000   ,BLIFE=  3.0000000    , 0.0          ,BACKGR=  1.0000000    , 2.0000000    ,INCRX=    10,INCRY=     5,DELTA=
 15.000000    ,RBASE=  10.000000    , 5.0000000    ,IREG=         1,SO2CAL= 0.0          , 1.0000000    ,PARCAL=
0.0           , 1.0000000    ,NSO2=      9,NPART=      8,SO2DB=  79.199997    , 63.500000    , 37.000000    , 65.000000    ,
 56.299988    , 31.000000    , 83.879994    , 71.000000    , 31.000000    , 88.599991    , 68.899994    , 51.000000    ,
 90.299988    , 72.599991    , 28.000000    , 81.899994    , 96.500000    , 19.000000    , 126.79999    , 85.199997    ,
 20.000000    , 75.000000    , 17.099991    , 51.000000    , 82.099991    , 54.899994    , 80.000000    , 0.0          ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
```

Figure 2-5. (Continued)

```
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
PAROB=  79.199997   ,  63.500000   ,  15.000000   ,  60.000000   ,  71.099991   ,  8.0000000   ,  88.500000   ,
 74.599991   , 30.000000   , 91.500000   , 90.000000   , 11.000000   , 90.000000   , 65.299988   , 27.000000   ,
 75.199997   , 53.500000   , 13.000000   , 70.500000   , 23.000000   , 20.000000   , 71.199997   , 9.5000000   ,
 10.000000   , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
 75.000000   , 30.000000   , 77.500000   , 57.500000   , 75.000000   ,IADD=     10,XRECEP=  55.000000   ,  15.000000   ,
 90.000000   , 60.000000   , 95.000000   , 57.500000   , 65.000000   , 60.000000   , 82.500000   , 60.000000   ,
 95.000000   , 82.500000   , 0.0         , 0.0         , 0.0         , 70.000000   , 75.000000   , 75.000000   ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
0.0          , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         , 0.0         ,
```

Figure 2-5. (Continued)

```
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0          ,IPUNCH=     1,ISTAT=     1,AQSTAN= 35.000000    , 15.000000    ,NSEL5=     0,ICONS=     0,     0,
    0,     0,     0,ICONP=     0,     0,     0,     0,     0,NSEL12=     0,ISTATS=     0,     0,     0,     0,     0,     0,     0,     0,
    0,     0,     0,     0,     0,ISTATP=     0,     0,     0,     0,     0,     0,     0,     0,     0,     0,     0,     0,SGDS=
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0          ,SGDP= 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0          ,SO2AVG= 0.0           , 0.0           , 0.0           , 0.0           , 0.0          ,PARAVG= 0.0          ,
0.0           , 0.0           , 0.0           , 0.0          ,SO2PER= 0.0           , 0.0           , 0.0          ,PARPER=
0.0           , 0.0           , 0.0
&END
```

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

SOURCE DATA

SOURCE NUMBER	SIC CODE	SITE CODE	PROC CODE	SOURCE LOCATION (KILOMETERS) HORIZ	VERT	SOURCE AREA (SQ KM)	EMISSION RATE (TONS/DAY) SO2	PART	STACK HEIGHT (METERS)	STACK DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	EXIT TEMP (DEG K)
1	2119	1	25	60.0	60.0	0.0	0.0	0.10	15.2	0.6	15.2	333.6
2	2800	41	10	88.0	71.0	0.0	25.00	4.00	24.1	2.6	17.7	483.7
3	2819	33	2	89.3	63.8	0.0	19.10	0.26	29.9	1.9	15.2	362.0
4	2819	34	2	80.8	57.0	0.0	23.70	0.21	29.9	1.9	15.2	361.4
5	2819	34	20	80.8	57.0	0.0	20.36	3.90	24.1	2.2	17.7	500.4
6	2319	160	3	71.5	31.7	0.0	0.0	21.90	22.9	2.1	15.2	505.4
7	2871	260	1	90.3	70.0	0.0	0.0	8.00	18.0	2.0	15.2	325.3
8	2911	61	1	97.3	90.5	0.0	0.0	0.12	29.9	7.4	15.2	311.2
9	2951	150	1	68.0	54.3	0.0	0.0	0.97	18.0	0.9	17.7	394.2
10	3241	100	1	85.2	78.9	0.0	0.0	2.79	61.0	3.4	15.2	561.0
11	3295	51	1	83.1	91.2	0.0	0.0	19.18	11.9	2.1	17.7	294.1
12	3312	111	1	92.1	74.2	0.0	0.0	1.00	29.9	4.5	17.7	475.9
13	3312	111	2	92.1	74.2	0.0	0.0	0.74	29.9	5.3	17.7	803.4
14	3312	111	3	92.1	74.2	0.0	0.23	0.27	29.9	3.6	17.7	444.2
15	3323	71	30	89.6	73.9	0.0	0.80	0.10	30.8	2.2	15.2	506.0
16	3323	71	40	89.6	73.9	0.0	0.80	0.10	30.8	2.2	15.2	506.0
17	3323	72	1	89.8	74.5	0.0	0.92	1.01	29.9	0.5	17.7	449.8
18	3332	270	1	71.8	26.4	0.0	203.00	0.31	29.9	3.2	17.7	733.4
19	3332	270	3	71.8	26.4	0.0	28.20	0.02	29.9	0.7	17.7	783.4
20	4911	5	10	75.2	99.0	0.0	192.08	1.80	121.0	6.7	15.2	439.2
21	4911	6	20	130.0	84.5	0.0	3.59	4.20	121.0	0.9	15.2	444.8
22	4911	7	30	76.9	4.2	0.0	377.20	8.10	121.0	32.5 *	15.2	427.6
23	4953	130	1	86.8	72.0	0.0	0.30	2.55	46.0	2.9	15.2	533.8
24	4953	131	2	76.5	70.2	0.0	0.22	0.33	14.9	0.0	0.0	255.2
25	4953	131	4	87.0	70.0	0.0	0.00	0.08	36.6	1.5	6.1	533.2
26	4953	132	2	129.5	83.5	0.0	0.15	0.22	14.9	0.0	0.0	255.2
27	9999	10	0	42.0	10.0	400.0	0.08	0.01	0.0	0.0	0.0	0.0
28	9999	20	0	42.0	30.0	400.0	0.10	0.02	0.0	0.0	0.0	0.0
29	9999	30	0	42.0	50.0	400.0	0.50	0.10	10.1	0.0	0.0	0.0
30	9999	40	0	42.0	70.0	400.0	0.55	0.12	10.1	0.0	0.0	0.0
31	9999	50	0	62.0	10.0	400.0	0.06	0.01	0.0	0.0	0.0	0.0
32	9999	60	0	62.0	10.0	400.0	0.06	0.01	0.0	0.0	0.0	0.0
33	9999	70	0	62.0	30.0	400.0	0.70	0.19	10.1	0.0	0.0	0.0
34	9999	80	0	62.0	30.0	100.0	0.10	0.02	10.1	0.0	0.0	0.0
35	9999	90	0	62.0	50.0	100.0	6.40	1.70	10.1	0.0	0.0	0.0
36	9999	100	0	72.0	50.0	100.0	8.20	2.30	10.1	0.0	0.0	0.0
37	9999	110	0	62.0	60.0	100.0	7.10	1.80	10.1	0.0	0.0	0.0
38	9999	120	0	72.0	60.0	100.0	19.60	5.00	20.1	0.0	0.0	0.0
39	9999	130	0	62.0	70.0	100.0	3.50	1.00	10.1	0.0	0.0	0.0
40	9999	140	0	72.0	70.0	400.0	4.20	1.10	10.1	0.0	0.0	0.0

* NORMALIZED PLUME RISE VALUE (SQUARE METERS PER SECOND)

Figure 2-5. (Continued)

SOURCE DATA

SOURCE NUMBER	SIC CODE	SITE CODE	PROC CODE	SOURCE LOCATION (KILOMETERS) HORIZ	VERT	SOURCE AREA (SQ KM)	EMISSION RATE (TONS/DAY) SO2	PART	STACK HEIGHT (METERS)	STACK DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	EXIT TEMP (DEG K)
41	9999	150	0	62.0	80.0	400.0	0.50	0.11	10.1	0.0	0.0	0.0
42	9999	160	0	82.0	10.0	400.0	0.07	0.01	10.1	0.0	0.0	0.0
43	9999	170	0	82.0	30.0	100.0	0.30	0.01	10.1	0.0	0.0	0.0
44	9999	180	0	82.0	50.0	100.0	1.25	0.25	10.1	0.0	0.0	0.0
45	9999	190	0	82.0	50.0	100.0	3.75	0.75	10.1	0.0	0.0	0.0
46	9999	200	0	82.0	60.0	100.0	5.00	1.60	10.1	0.0	0.0	0.0
47	9999	210	0	82.0	60.0	100.0	5.00	1.60	10.1	0.0	0.0	0.0
48	9999	220	0	82.0	70.0	100.0	2.50	0.70	10.1	0.0	0.0	0.0
49	9999	230	0	82.0	70.0	100.0	1.20	0.30	10.1	0.0	0.0	0.0
50	9999	240	0	92.0	70.0	100.0	3.50	0.90	10.1	0.0	0.0	0.0
51	9999	250	0	92.0	80.0	400.0	0.18	0.04	10.1	0.0	0.0	0.0
52	9999	260	0	82.0	80.0	400.0	0.46	0.09	10.1	0.0	0.0	0.0
53	9999	270	0	102.0	30.0	400.0	0.20	0.05	10.1	0.0	0.0	0.0
54	9999	280	0	92.0	50.0	400.0	0.75	0.15	10.1	0.0	0.0	0.0
55	9999	290	0	102.0	70.0	400.0	0.50	0.10	10.1	0.0	0.0	0.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 1

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0

Figure 2-5. (Continued)

STABILITY WIND ROSE DATA

STABILITY CLASS 2

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.00046	0.00046	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.00046	0.0	0.0	0.0	0.0
ENE	0.00046	0.0	0.0	0.0	0.0	0.0
E	0.00092	0.00046	0.00046	0.0	0.0	0.0
ESE	0.00092	0.0	0.0	0.0	0.0	0.0
SE	0.00092	0.00046	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.00092	0.0	0.0	0.0	0.0	0.0
W	0.0	0.00046	0.0	0.0	0.0	0.0
WNW	0.00046	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 3

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.00046	0.0	0.00323	0.0	0.0	0.0
NNE	0.0	0.00046	0.00092	0.0	0.0	0.0
NE	0.0	0.0	0.00092	0.0	0.0	0.0
ENE	0.00092	0.00092	0.00461	0.0	0.0	0.0
E	0.00185	0.00277	0.00415	0.00046	0.0	0.0
ESE	0.0	0.00369	0.00461	0.0	0.0	0.0
SE	0.00138	0.00323	0.00277	0.0	0.0	0.0
SSE	0.0	0.00277	0.00092	0.0	0.0	0.0
S	0.0	0.00092	0.00092	0.0	0.0	0.0
SSW	0.0	0.00185	0.00092	0.0	0.0	0.0
SW	0.0	0.00185	0.00092	0.0	0.0	0.0
WSW	0.00046	0.00138	0.00092	0.0	0.0	0.0
W	0.0	0.00138	0.00092	0.0	0.0	0.0
WNW	0.00046	0.00046	0.00092	0.0	0.0	0.0
NW	0.0	0.00092	0.00046	0.0	0.0	0.0
NNW	0.0	0.00138	0.00138	0.0	0.0	0.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 4

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.0	0.00185	0.05258	0.03828	0.00369	0.0
NNE	0.0	0.00092	0.01338	0.01568	0.00277	0.0
NE	0.0	0.00092	0.01061	0.01476	0.00046	0.0
ENE	0.0	0.00369	0.01061	0.01061	0.00046	0.0
E	0.0	0.00560	0.01476	0.01384	0.00554	0.00138
ESE	0.0	0.00277	0.01015	0.05074	0.01107	0.00138
SE	0.0	0.00138	0.02168	0.04105	0.00507	0.00046
SSE	0.0	0.00185	0.01753	0.02445	0.00277	0.0
S	0.0	0.00046	0.01476	0.02998	0.00231	0.0
SSW	0.0	0.00138	0.00876	0.00876	0.0	0.0
SW	0.0	0.00185	0.00185	0.0	0.0	0.0
WSW	0.0	0.00092	0.00876	0.00046	0.0	0.0
W	0.0	0.00415	0.01292	0.00692	0.0	0.0
WNW	0.0	0.00369	0.01568	0.01107	0.00185	0.0
NW	0.0	0.00231	0.02445	0.01614	0.00277	0.0
NNW	0.0	0.00277	0.02998	0.03275	0.00231	0.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 5

	WIND SPEED CLASS					
WIND DIRECTION	1	2	3	4	5	6
N	0.00507	0.01245	0.02122	0.0	0.0	0.0
NNE	0.00046	0.00277	0.00461	0.0	0.0	0.0
NE	0.00092	0.00507	0.00277	0.0	0.0	0.0
ENE	0.00323	0.00784	0.00415	0.0	0.0	0.0
E	0.01061	0.01614	0.00554	0.0	0.0	0.0
ESE	0.00554	0.01614	0.01245	0.0	0.0	0.0
SE	0.00138	0.00692	0.00461	0.0	0.0	0.0
SSE	0.00092	0.00507	0.00507	0.0	0.0	0.0
S	0.00277	0.00461	0.00231	0.0	0.0	0.0
SSW	0.00507	0.00646	0.0	0.0	0.0	0.0
SW	0.00092	0.00369	0.0	0.0	0.0	0.0
WSW	0.00185	0.00369	0.0	0.0	0.0	0.0
W	0.00185	0.00646	0.00046	0.0	0.0	0.0
WNW	0.00554	0.01199	0.00369	0.0	0.0	0.0
NW	0.00876	0.01107	0.00369	0.0	0.0	0.0
NNW	0.00323	0.01153	0.00692	0.0	0.0	0.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

REGIONAL DATA

AMBIENT TEMPERATURE (DEGREES KELVIN)	=	288.0
AMBIENT PRESSURE (MILLIBARS)	=	1000.0
MIXING HEIGHT (METERS)	=	1000.0
HALF LIFE (HOURS) FOR:		
SO2	=	3.0
PARTICULATES	=	INFINITE
BACKGROUND CONCENTRATION (MICROGRAMS/CUBIC METER) FOR:		
SO2	=	1.0
PARTICULATES	=	2.0

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

CORRELATION DATA FOR SO2				
MONITORING STATION NUMBER	STATION LOCATION (KILOMETERS) HORIZ	VERT	ARITHMETIC MEAN CONCENTRATION (MICROGRAMS/CUBIC METER) OBSERVED *	COMPUTED
1	79.2	63.5	36.0	40.8
2	65.0	56.3	30.0	23.6
3	83.9	71.0	30.0	32.9
4	88.6	68.9	50.0	63.1
5	90.3	72.6	27.0	24.2
6	81.9	96.5	18.0	6.9
7	126.8	85.2	19.0	2.8
8	75.0	17.1	50.0	63.8
9	82.1	54.9	79.0	93.3

* OBSERVED = INPUT MEASURED VALUE - INPUT BACKGROUND VALUE

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN: 1 OF 2 DATE: DECEMBER 28, 1970

CORRELATION DATA FOR PARTICULATES				
MONITORING STATION NUMBER	STATION LOCATION (KILOMETERS) HORIZ	VERT	ARITHMETIC MEAN CONCENTRATION (MICROGRAMS/CUBIC METER) OBSERVED *	COMPUTED
1	79.2	63.5	13.0	11.6
2	60.0	71.1	6.0	7.6
3	88.5	74.5	28.0	23.1
4	91.5	90.0	9.0	8.1
5	90.0	65.3	25.0	21.2
6	75.2	53.5	11.0	9.6
7	70.5	23.0	18.0	14.4
8	71.2	9.5	8.0	8.5

* OBSERVED = INPUT MEASURED VALUE - INPUT BACKGROUND VALUE

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

REGRESSION PARAMETERS					
POLLUTANT	Y-INTERCEPT	SLOPE	REGRESSION COEFFICIENTS COMPUTED	5% CONF. LEVEL	COMMENT
SO2	13.10	0.6203	0.98675	0.66600	STATISTICALLY SIGNIFICANT
PARTICULATES	-2.59	1.3315	0.99286	0.70700	STATISTICALLY SIGNIFICANT

IF "NOT STATISTICALLY SIGNIFICANT".....THE COMPUTED SLOPE AND Y-INTERCEPT ARE NOT USED FOR CALIBRATION

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

RECEPTOR CONCENTRATION DATA

RECEPTOR NUMBER	RECEPTOR LOCATION (KILOMETERS) HORIZ	VERT	EXPECTED ARITHMETIC MEAN (MICROGRAMS/CUBIC METER) SO2	PART
1	10.0	5.0	15.4	1.2
2	10.0	20.0	16.0	1.9
3	10.0	35.0	16.4	2.9
4	10.0	50.0	16.5	3.9
5	10.0	65.0	16.4	4.6
6	25.0	5.0	16.3	1.4
7	25.0	20.0	17.5	2.3
8	25.0	35.0	18.0	3.5
9	25.0	50.0	17.9	4.9
10	25.0	65.0	17.6	5.6
11	40.0	5.0	18.0	1.6
12	40.0	20.0	20.2	2.6
13	40.0	35.0	21.0	4.7
14	40.0	50.0	20.3	6.2
15	40.0	65.0	19.7	7.2
16	55.0	5.0	22.8	2.7
17	55.0	20.0	26.1	3.9
18	55.0	35.0	28.4	8.6
19	55.0	50.0	23.3	7.3
20	55.0	65.0	23.4	9.2
21	70.0	5.0	59.0	8.9
22	70.0	20.0	53.3	13.7
23	70.0	35.0	39.0	27.5
24	70.0	50.0	28.6	10.5
25	70.0	65.0	32.6	11.9
26	85.0	5.0	34.3	7.3
27	85.0	20.0	28.9	9.5
28	85.0	35.0	26.1	10.6
29	85.0	50.0	36.1	13.8
30	85.0	65.0	46.1	16.4
31	100.0	5.0	20.9	5.3
32	100.0	20.0	19.8	6.8
33	100.0	35.0	20.1	7.6
34	100.0	50.0	22.0	8.8
35	100.0	65.0	20.9	9.5
36	115.0	5.0	17.5	4.1
37	115.0	20.0	17.2	4.8
38	115.0	35.0	17.3	5.3
39	115.0	50.0	17.4	5.4
40	115.0	65.0	16.8	4.6

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

RECEPTOR CONCENTRATION DATA				
RECEPTOR NUMBER	RECEPTOR LOCATION (KILOMETERS) HORIZ	VERT	EXPECTED ARITHMETIC MEAN (MICROGRAMS/CUBIC METER) SO2	PART
41	130.0	5.0	16.0	3.4
42	130.0	20.0	16.0	3.8
43	130.0	35.0	15.9	3.9
44	130.0	50.0	15.8	3.7
45	130.0	65.0	15.6	3.4
46	145.0	5.0	15.2	2.8
47	145.0	20.0	15.2	2.9
48	145.0	35.0	15.2	2.8
49	145.0	50.0	15.1	2.5
50	145.0	65.0	14.9	2.1
51	55.0	15.0	26.0	3.2
52	75.0	30.0	31.1	28.1
53	77.5	57.5	65.1	18.8
54	75.0	60.0	44.8	14.5
55	82.5	60.0	37.8	14.1
56	90.0	60.0	39.2	17.9
57	95.0	57.5	26.3	11.7
58	65.0	70.0	26.9	10.8
59	75.0	75.0	28.7	12.6
60	95.0	82.5	18.7	8.4

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

SO2 POLLUTANT CONCENTRATIONS ABOVE STANDARD OF 35.00 MICROGRAMS PER CUBIC METER

RECEPTOR NUMBER	POLLUTANT CONCENTRATION (MICROGRAMS PER CUBIC METER)				POLLUTANT REDUCTION (PERCENT)	
	ARITHMETIC MEAN CONCENTRATION	EXCESS ABOVE AIR QUALITY STANDARD	CONTRIBUTION FROM POINT SOURCES	CONTRIBUTION FROM AREA SOURCES	NECESSARY FOR POINT SOURCES	NECESSARY FOR ALL SOURCES
53	65.1173	30.1173	54.9365	9.1808	54.8220	46.9722
21	59.0200	24.0200	57.0970	0.9229	42.0687	41.3995
22	53.3345	18.3345	50.7323	1.6022	36.1397	35.0333
30	46.0951	11.0951	36.3534	8.7418	30.5202	24.6038
54	44.7948	9.7948	33.3110	10.4838	29.4041	22.3652
56	39.2024	4.2024	30.7713	7.4312	13.6570	11.0004
23	38.9991	3.9991	34.5395	3.4596	11.5783	10.5242
55	37.9012	2.6012	27.3983	9.4030	10.2241	7.6118
29	36.1218	1.1218	26.7826	8.3392	4.1836	3.1941

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2 DATE: DECEMBER 28, 1970

PARTICULATE POLLUTANT CONCENTRATIONS ABOVE STANDARD OF 15.00 MICROGRAMS PER CUBIC METER

RECEPTOR NUMBER	POLLUTANT CONCENTRATION (MICROGRAMS PER CUBIC METER)				POLLUTANT REDUCTION (PERCENT)	
	ARITHMETIC MEAN CONCENTRATION	EXCESS ABOVE AIR QUALITY STANDARD	CONTRIBUTION FROM POINT SOURCES	CONTRIBUTION FROM AREA SOURCES	NECESSARY FOR POINT SOURCES	NECESSARY FOR ALL SOURCES
52	28.0965	13.0965	23.3995	2.6970	55.9691	50.1849
23	27.4782	12.4782	22.9865	2.4917	54.2848	48.9760
53	18.8235	3.8235	11.5700	5.2536	33.0472	22.7273
56	17.9217	2.9217	11.6827	4.2390	25.0087	18.3503
30	16.3810	1.3810	9.8069	4.5741	14.0822	9.6031

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

PARTICULATE POLLUTANT CONCENTRATIONS ABOVE STANDARD OF 15.00 MICROGRAMS PER CUBIC METER						
RECEPTOR NUMBER	POLLUTANT CONCENTRATION (MICROGRAMS PER CUBIC METER)				POLLUTANT REDUCTION (PERCENT)	
	ARITHMETIC MEAN CONCENTRATION	EXCESS ABOVE AIR QUALITY STANDARD	CONTRIBUTION FROM POINT SOURCES	CONTRIBUTION FROM AREA SOURCES	NECESSARY FOR POINT SOURCES	NECESSARY FOR ALL SOURCES
52	28.0965	13.0965	23.3995	2.6970	55.9691	50.18
23	27.4782	12.4782	22.9865	2.4917	54.2848	48.9760
53	18.8235	3.8235	11.5700	5.2536	33.0472	22.7273
56	17.9217	2.9217	11.6827	4.2390	25.0087	18.3503
30	16.3810	1.3810	9.8069	4.5741	14.0822	9.6031

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM SO2 RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 53		RECEPTOR # 21		RECEPTOR # 22		RECEPTOR # 30		RECEPTOR # 54	
41	0.0140	0.02%	0.0033	0.01%	0.0051	0.01%	0.0200	0.04%	0.0188	0.04%
42	0.0009	0.00%	0.0019	0.00%	0.0031	0.01%	0.0007	0.00%	0.0009	0.00%
43	0.0113	0.02%	0.0060	0.01%	0.0104	0.02%	0.0079	0.02%	0.0111	0.02%
44	0.1857	0.29%	0.0146	0.02%	0.0231	0.04%	0.1407	0.31%	0.1822	0.41%
45	0.5572	0.86%	0.0437	0.07%	0.0692	0.13%	0.4220	0.92%	0.5465	1.22%
46	0.4977	0.76%	0.0431	0.07%	0.0702	0.13%	1.8659	4.05%	0.5439	1.21%
47	0.4977	0.76%	0.0431	0.07%	0.0702	0.13%	1.8659	4.05%	0.5439	1.21%
48	0.1420	0.22%	0.0188	0.03%	0.0290	0.05%	0.4287	0.93%	0.1466	0.33%
49	0.0603	0.09%	0.0081	0.01%	0.0124	0.02%	0.1837	0.40%	0.0628	0.14%
50	0.0881	0.14%	0.0175	0.03%	0.0222	0.04%	0.2559	0.56%	0.1199	0.27%
51	0.0033	0.01%	0.0007	0.00%	0.0011	0.00%	0.0067	0.01%	0.0036	0.01%
52	0.0085	0.01%	0.0019	0.00%	0.0028	0.01%	0.0171	0.04%	0.0093	0.02%
53	0.0044	0.01%	0.0012	0.00%	0.0021	0.00%	0.0048	0.01%	0.0044	0.01%
54	0.0271	0.04%	0.0044	0.01%	0.0059	0.01%	0.0421	0.09%	0.0294	0.07%
55	0.0055	0.01%	0.0014	0.00%	0.0016	0.00%	0.0113	0.02%	0.0064	0.01%
BACK-GROUND	1.0000	1.54%	1.0000	1.69%	1.0000	1.87%	1.0000	2.17%	1.0000	2.23%
TOTAL	65.1290	100.02%	59.0268	100.01%	53.3447	100.02%	46.1086	100.03%	44.8077	100.03%

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM PARTICULATE RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 52		RECEPTOR # 23		RECEPTOR # 53		RECEPTOR # 56		RECEPTOR # 30	
1	0.0153	0.05%	0.0181	0.07%	0.0196	0.10%	0.0076	0.04%	0.0077	0.05%
2	0.1276	0.45%	0.0841	0.31%	0.2117	1.12%	1.2518	6.98%	0.8005	4.89%
3	0.0088	0.03%	0.0101	0.04%	0.0422	0.22%	0.3078	1.72%	0.4493	2.74%
4	0.0242	0.09%	0.0117	0.04%	0.3649	1.94%	0.0243	0.14%	0.0303	0.19%
5	0.4467	1.59%	0.2160	0.79%	6.3038	33.49%	0.4396	2.45%	0.5522	3.37%
6	20.5144	73.37%	20.6317	75.08%	1.1582	6.15%	0.5912	3.30%	0.6957	4.25%
7	0.2460	0.88%	0.2569	0.93%	0.6394	3.40%	4.6689	26.05%	1.9261	11.76%
8	0.0006	0.00%	0.0006	0.00%	0.0008	0.00%	0.0017	0.01%	0.0010	0.01%
9	0.2234	0.79%	0.3665	1.33%	0.1883	1.00%	0.0816	0.46%	0.0676	0.41%
10	0.0576	0.21%	0.0385	0.14%	0.0842	0.45%	0.2217	1.24%	0.4043	2.47%
11	1.0842	3.86%	0.8900	3.24%	1.8833	10.00%	2.3743	13.25%	3.3525	20.47%
12	0.0105	0.04%	0.0107	0.04%	0.0220	0.12%	0.1060	0.59%	0.0507	0.31%
13	0.0065	0.02%	0.0065	0.02%	0.0110	0.06%	0.0414	0.23%	0.0187	0.11%
14	0.0049	0.02%	0.0048	0.02%	0.0091	0.05%	0.0530	0.30%	0.0218	0.13%
15	0.0039	0.01%	0.0029	0.01%	0.0069	0.04%	0.0386	0.22%	0.0159	0.10%
16	0.0039	0.01%	0.0029	0.01%	0.0069	0.04%	0.0386	0.22%	0.0159	0.10%
17	0.0517	0.18%	0.0343	0.12%	0.0847	0.45%	0.5393	3.01%	0.1754	1.07%
18	0.0123	0.04%	0.0434	0.16%	0.0056	0.03%	0.0023	0.01%	0.0029	0.02%
19	0.0069	0.02%	0.0078	0.03%	0.0020	0.01%	0.0015	0.01%	0.0016	0.01%
20	0.0270	0.10%	0.0261	0.09%	0.0440	0.23%	0.0315	0.18%	0.0393	0.24%
21	0.0169	0.06%	0.0184	0.07%	0.0328	0.17%	0.0437	0.24%	0.0430	0.26%
22	0.2509	0.89%	0.2031	0.74%	0.0927	0.49%	0.0607	0.34%	0.0618	0.38%
23	0.0925	0.33%	0.0525	0.19%	0.1368	0.73%	0.5723	3.19%	0.8227	5.02%
24	0.0562	0.20%	0.0438	0.16%	0.1987	1.06%	0.1230	0.69%	0.2041	1.25%
25	0.0057	0.02%	0.0031	0.01%	0.0095	0.05%	0.0477	0.27%	0.0316	0.19%
26	0.0046	0.02%	0.0059	0.02%	0.0112	0.06%	0.0131	0.07%	0.0149	0.09%
27	0.0006	0.00%	0.0006	0.00%	0.0004	0.00%	0.0003	0.00%	0.0004	0.00%
28	0.0029	0.01%	0.0029	0.01%	0.0010	0.01%	0.0008	0.00%	0.0008	0.00%
29	0.0126	0.04%	0.0142	0.05%	0.0089	0.05%	0.0063	0.04%	0.0054	0.03%
30	0.0124	0.04%	0.0132	0.05%	0.0148	0.08%	0.0115	0.06%	0.0120	0.07%
31	0.0017	0.01%	0.0012	0.00%	0.0008	0.00%	0.0008	0.00%	0.0008	0.00%
32	0.0017	0.01%	0.0012	0.00%	0.0008	0.00%	0.0008	0.00%	0.0009	0.00%
33	0.0359	0.13%	0.0459	0.17%	0.0138	0.07%	0.0105	0.06%	0.0115	0.07%
34	0.0069	0.02%	0.0107	0.04%	0.0020	0.01%	0.0011	0.01%	0.0013	0.01%
35	0.3896	1.39%	0.4220	1.54%	0.2946	1.57%	0.1479	0.83%	0.1260	0.77%
36	0.4495	1.60%	0.3531	1.28%	1.1380	6.05%	0.2812	1.57%	0.2893	1.77%
37	0.2813	1.00%	0.3287	1.20%	0.5292	2.81%	0.2764	1.54%	0.2556	1.56%
38	0.7605	2.71%	0.6559	2.39%	1.5236	8.09%	1.2082	6.74%	1.0120	6.18%
39	0.1141	0.41%	0.1394	0.51%	0.2541	1.35%	0.1904	1.06%	0.2094	1.28%
40	0.0888	0.32%	0.0778	0.28%	0.1312	0.70%	0.1690	0.94%	0.1479	0.90%

Figure 2-5. (Continued)

REGION: CENTRAL CITY RUN 1 OF 2

DATE: DECEMBER 28, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM PARTICULATE RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 52		RECEPTOR # 23		RECEPTOR # 53		RECEPTOR # 56		RECEPTOR # 30	
41	0.0094	0.03%	0.0097	0.04%	0.0127	0.07%	0.0136	0.08%	0.0152	0.09%
42	0.0016	0.01%	0.0014	0.00%	0.0006	0.00%	0.0006	0.00%	0.0005	0.00%
43	0.0039	0.01%	0.0047	0.02%	0.0016	0.01%	0.0017	0.01%	0.0014	0.01%
44	0.0267	0.10%	0.0211	0.08%	0.0855	0.45%	0.0485	0.27%	0.0521	0.32%
45	0.0802	0.29%	0.0634	0.23%	0.2565	1.36%	0.1454	0.81%	0.1562	0.95%
46	0.1446	0.51%	0.1105	0.40%	0.3678	1.95%	0.6252	3.49%	0.9000	5.49%
47	0.1446	0.51%	0.1105	0.40%	0.3678	1.95%	0.6252	3.49%	0.9000	5.49%
48	0.0522	0.19%	0.0466	0.17%	0.0913	0.49%	0.1915	1.07%	0.1947	1.19%
49	0.0224	0.08%	0.0200	0.07%	0.0392	0.21%	0.0821	0.46%	0.0835	0.51%
50	0.0422	0.15%	0.0254	0.09%	0.0748	0.40%	0.1501	0.84%	0.1489	0.91%
51	0.0021	0.01%	0.0020	0.01%	0.0028	0.01%	0.0045	0.03%	0.0040	0.02%
52	0.0048	0.02%	0.0045	0.02%	0.0062	0.03%	0.0101	0.06%	0.0091	0.06%
53	0.0055	0.02%	0.0061	0.02%	0.0058	0.03%	0.0055	0.03%	0.0045	0.03%
54	0.0078	0.03%	0.0091	0.03%	0.0219	0.12%	0.0229	0.13%	0.0232	0.14%
55	0.0031	0.01%	0.0033	0.01%	0.0066	0.03%	0.0081	0.05%	0.0089	0.05%
BACK-GROUND	2.0000	7.12%	2.0000	7.28%	2.0000	10.62%	2.0000	11.16%	2.0000	12.21%
TOTAL	28.1124	100.06%	27.4952	100.06%	18.8246	100.01%	17.9228	100.01%	16.3822	100.01%

Figure 2-5. (Continued)

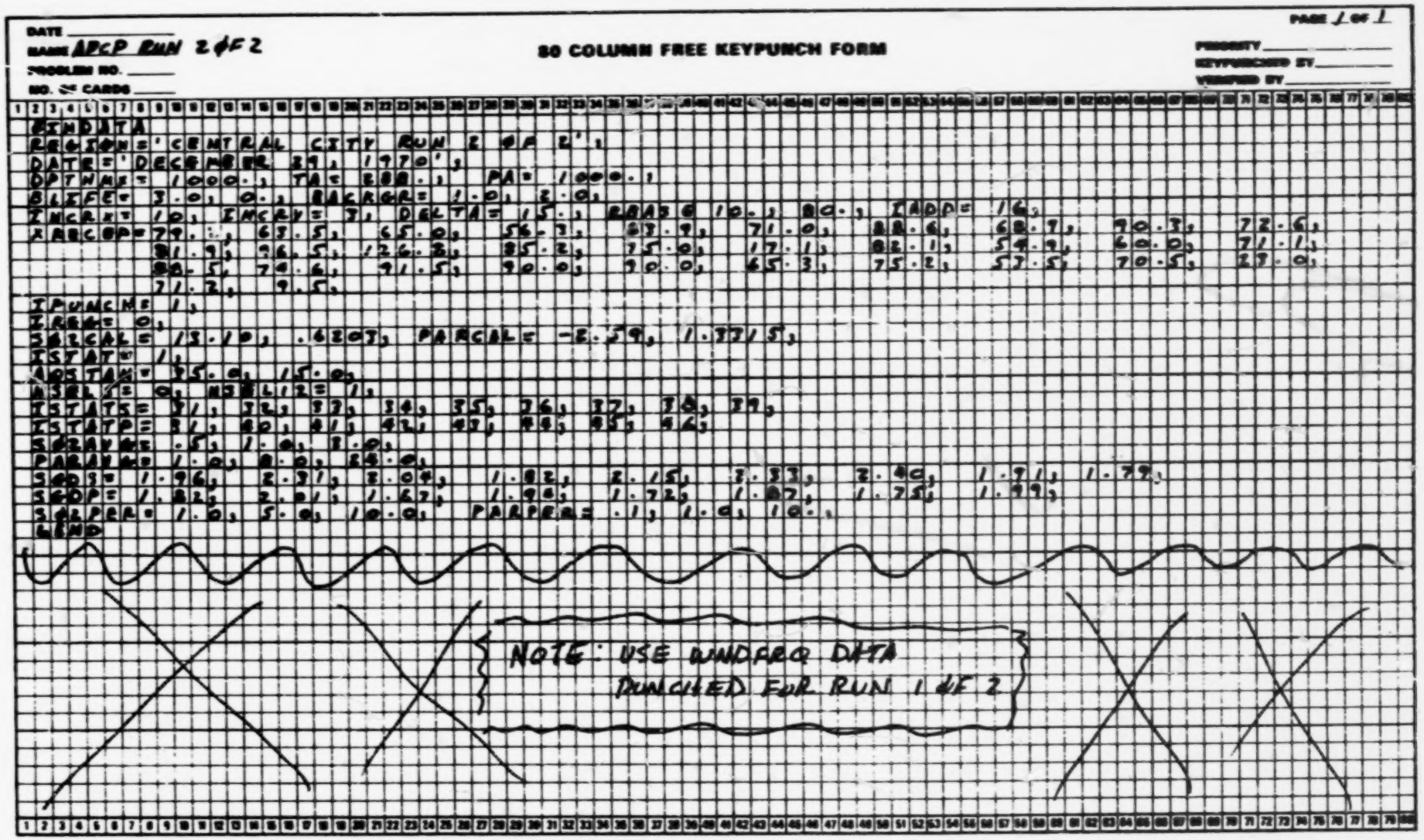

Figure 2-6. Air Pollutant Concentration Program Input - Run 2 of 2.

```
&INDATA
REGION= -3165.3679    ,-0.95977588E 30, -3230.2441    , 0.85114795    , 0.94630182    , -4256320.0    ,DATE= -50627.770    ,
-0.91978874E 24, 0.94911832    , 0.94522041    ,-0.15754294E 58,IPOLU1=     0,DPTHMX=  1000.0000    ,WNDFRQ= 0.0    ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.45999978E-03,
 0.45999978E-03, 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.45999978E-03, 0.0            , 0.0            , 0.0            ,
 0.0            , 0.45999978E-03, 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.91999979E-03,
 0.45999978E-03, 0.45999978E-03, 0.0            , 0.0            , 0.0            , 0.91999979E-03, 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.91999979E-03, 0.45999978E-03, 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.91999979E-03, 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.45999978E-03, 0.0            , 0.0            , 0.0            , 0.0            , 0.45999978E-03, 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            ,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.45999978E-03, 0.0            ,
 0.0            , 0.32299999E-02, 0.0            , 0.0            , 0.0            , 0.0            , 0.45999978E-03, 0.91999979E-03,
 0.0            , 0.0            , 0.0            , 0.0            , 0.0            , 0.91999979E-03, 0.0            , 0.0            ,
 0.0            , 0.91999979E-03, 0.91999979E-03, 0.46099983E-02, 0.0            , 0.0            , 0.0            , 0.18499999E-02,
 0.27699999E-02, 0.41499995E-02, 0.45999978E-03, 0.0            , 0.0            , 0.0            , 0.36899999E-02, 0.46099983E-02,
 0.0            , 0.0            , 0.0            , 0.13799998E-02, 0.32299999E-02, 0.27699999E-02, 0.0            , 0.0            ,
 0.0            , 0.0            , 0.27699999E-02, 0.91999979E-03, 0.0            , 0.0            , 0.0            , 0.0            ,
 0.91999979E-03, 0.91999979E-03, 0.0            , 0.0            , 0.0            , 0.0            , 0.18499999E-02, 0.91999979E-03,
 0.0            , 0.0            , 0.0            , 0.0            , 0.18499999E-02, 0.91999979E-03, 0.0            , 0.0            ,
 0.0            , 0.45999978E-03, 0.13795558E-02, 0.91999979E-03, 0.0            , 0.0            , 0.0            , 0.0            ,
 0.13799998E-02, 0.91999979E-03, 0.0            , 0.0            , 0.0            , 0.45999978E-03, 0.45999978E-03, 0.91999979E-03,
 0.0            , 0.0            , 0.0            , 0.0            , 0.91999979E-03, 0.45999978E-03, 0.0            , 0.0            ,
 0.0            , 0.0            , 0.13799998E-02, 0.13799998E-02, 0.0            , 0.0            , 0.0            , 0.0            ,
 0.18499999E-02, 0.52579999E-01, 0.38279999E-01, 0.36899999E-02, 0.0            , 0.0            , 0.91999979E-03, 0.13379999E-01,
 0.15679996E-01, 0.27699999E-02, 0.0            , 0.0            , 0.91999979E-03, 0.10609999E-01, 0.14759999E-01, 0.45999978E-03,
 0.0            , 0.0            , 0.36899999E-02, 0.10609999E-01, 0.10609999E-01, 0.45999978E-03, 0.0            , 0.0            ,
 0.55999979E-02, 0.14759999E-01, 0.13839997E-01, 0.55399984E-02, 0.13799998E-02, 0.0            , 0.27699999E-02, 0.10149997E-01,
 0.50740000E-01, 0.11069998E-01, 0.13799998E-02, 0.0            , 0.13799998E-02, 0.21679997E-01, 0.41049998E-01, 0.50699972E-02,
 0.45999978E-03, 0.0            , 0.18499999E-02, 0.17529998E-01, 0.24449997E-01, 0.27699999E-02, 0.0            , 0.0            ,
 0.45999978E-03, 0.14759999E-01, 0.29579596E-01, 0.23099999E-02, 0.0            , 0.0            , 0.13799998E-02, 0.87599978E-02,
```

Figure 2-7. Air Pollutant Concentration Program Output - Run 2 of 2.

```
0.37599978E-02, 0.0           , 0.0           , 0.0           , 0.18499999E-02, 0.18499999E-02, 0.0           , 0.0           ,
0.0           , 0.0           , 0.91999979E-03, 0.87599978E-02, 0.45999978E-03, 0.0           , 0.0           , 0.0           ,
0.41499995E-02, 0.12920000E-01, 0.69199987E-02, 0.0           , 0.0           , 0.0           , 0.36899999E-02, 0.15679996E-01,
0.11069998E-01, 0.18499999E-02, 0.0           , 0.0           , 0.23099999E-02, 0.24449997E-01, 0.16139999E-01, 0.27699999E-02,
0.0           , 0.0           , 0.27699999E-02, 0.29979996E-01, 0.32749999E-01, 0.23099999E-02, 0.0           , 0.50699972E-02,
0.12449998E-01, 0.21219999E-01, 0.0           , 0.0           , 0.0           , 0.45999978E-03, 0.27699999E-02, 0.46099983E-02,
0.0           , 0.0           , 0.0           , 0.91999979E-03, 0.50699972E-02, 0.27699999E-02, 0.0           , 0.0           ,
0.0           , 0.32299999E-02, 0.78399964E-02, 0.41499995E-02, 0.0           , 0.0           , 0.0           , 0.10609999E-01,
0.16139999E-01, 0.55399984E-02, 0.0           , 0.0           , 0.0           , 0.55399984E-02, 0.16139999E-01, 0.12449998E-01,
0.0           , 0.0           , 0.0           , 0.13799998E-02, 0.69199987E-02, 0.46099983E-02, C.0           , 0.0           ,
0.0           , 0.91999979E-03, 0.50699972E-02, 0.50699972E-02, 0.0           , 0.0           , 0.0           , 0.27699999E-02,
0.46099983E-02, 0.23099999E-02, 0.0           , 0.0           , 0.0           , 0.50699972E-02, 0.64599998E-02, 0.0           ,
0.0           , 0.0           , 0.0           , 0.91999979E-03, 0.36899999E-02, 0.0           , 0.0           , 0.0           ,
0.0           , 0.18499999E-02, 0.36899999E-02, 0.0           , 0.0           , 0.0           , 0.0           , 0.18499999E-02,
0.64599998E-02, 0.45999978E-03, 0.0           , 0.0           , 0.0           , 0.55399984E-02, 0.11990000E-01, 0.36899999E-02,
0.0           , 0.0           , 0.0           , 0.87599978E-02, 0.11069998E-01, 0.36899999E-02, 0.0           , 0.0           ,
0.0           , 0.32299999E-02, 0.11529997E-01, 0.69199987E-02, 0.0           , 0.0           , 0.0           ,TA=  288.00000   ,
PA=  1000.0000    ,BLIFE=  3.0000000    , 0.0         ,BACKGR=  1.0000000    ,  2.0000000    ,INC?X=     10,INCRY=      3,DELTA=
 15.000000    ,RBASE=  10.000000    ,  80.000000    ,IREG=          0,SO2CAL=  13.099999    , 0.62029999    ,PARCAL=
-2.5899992    ,  1.3314991    ,NSO2=       0,NPART=       0,SO2OB= 0.0          , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
```

Figure 2-7. (Continued)

```
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
PAROB= 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
0.0        , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      , 0.0      ,
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Figure 2-7. (Continued)

```
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,IADD=     16,XRECEP=  79.199997     ,  63.500000     ,
 65.000000      ,  56.299988      ,  83.899994      ,  71.000000      ,  68.599991      ,  68.899994      ,  80.299988      ,  73.000000      ,
 81.899994      ,  96.500000      ,  126.79999      ,  85.199997      ,  75.000000      ,  17.099991      ,  82.099991      ,  64.899994      ,
 60.000000      ,  71.099991      ,  88.500000      ,  74.599991      ,  91.500000      ,  90.000000      ,  90.000000      ,  65.299988      ,
 75.199997      ,  53.500000      ,  70.500000      ,  23.000000      ,  71.199997      ,  9.5000000      , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             , 0.0             ,
0.0             , 0.0             ,IPUNCH=     1,ISTAT=     1,AQSTAN=  35.000000     ,  15.000000     ,NSEL5=     0,ICONS=     0,     0,
    0,     0,     0,ICONP=     0,     0,     0,     0,     0,NSEL12=     1,ISTATS=    31,    32,    33,    34,    35,    36,    37,
   38,    39,     0,     0,     0,ISTATP=    31,    40,    41,    42,    43,    44,    45,    46,     0,     0,     0,     0,SGDS=
 1.9599991      ,  2.3099995      ,  2.0400000      ,  1.8199997      ,  2.1499996      ,  2.3299999      ,  2.3999996      ,  1.9099998      ,
 1.7900000      , 0.0             , 0.0             , 0.0             ,SGDP=  1.8299999     ,  2.0099993      ,  1.6699991      ,
 1.9399996      ,  1.7199993      ,  1.8699999      ,  1.7500000      ,  1.9899998      , 0.0             , 0.0             , 0.0             ,
0.0             ,SO2AVG= 0.50000000     ,  1.0000000      ,  3.0000000      , 0.0             , 0.0             ,PARAVG=  1.0000000     ,
 8.0000000      ,  24.000000      , 0.0             , 0.0             ,SO2PER=  1.0000000     ,  5.0000000      ,  10.000000      ,PARPER=
0.99999964E-01,  1.0000000      ,  10.000000
&END
```

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

SOURCE DATA

SOURCE NUMBER	SIC CODE	SITE CODE	PROC CODE	SOURCE LOCATION (KILOMETERS) HORIZ	VERT	SOURCE AREA (SQ KM)	EMISSION RATE (TONS/DAY) SO2	PART	STACK HEIGHT (METERS)	STACK DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	EXIT TEMP (DEG K)
1	2119	1	25	60.0	60.0	0.0	0.0	0.10	15.2	0.6	15.2	338.6
2	2800	41	10	88.0	71.0	0.0	25.00	4.00	24.1	2.6	17.7	433.7
3	2819	33	2	88.3	63.8	0.0	19.10	0.26	29.9	1.9	15.2	362.0
4	2819	34	2	80.8	57.0	0.0	23.70	0.21	29.9	1.9	15.2	361.4
5	2819	34	20	80.8	57.0	0.0	20.36	3.90	24.1	2.2	17.7	500.4
6	2819	160	3	71.5	31.7	0.0	0.0	21.90	22.9	2.1	15.2	505.4
7	2871	260	1	90.3	70.0	0.0	0.0	8.00	18.0	2.0	15.2	325.3
8	2911	61	1	97.3	90.5	0.0	0.0	0.12	29.9	7.4	15.2	811.2
9	2951	150	1	68.0	54.3	0.0	0.0	0.97	18.0	0.9	17.7	394.2
10	3241	100	1	85.2	78.9	0.0	0.0	2.79	61.0	3.4	15.2	561.0
11	3295	51	1	83.1	91.2	0.0	0.0	19.18	11.9	2.1	17.7	294.1
12	3312	111	1	92.1	74.2	0.0	0.0	1.00	29.9	4.5	17.7	475.9
13	3312	111	2	92.1	74.2	0.0	0.0	0.74	29.9	5.3	17.7	633.4
14	3312	111	3	92.1	74.2	0.0	0.23	0.27	29.9	3.6	17.7	444.2
15	3323	71	30	89.6	73.9	0.0	0.80	0.10	30.8	2.2	15.2	506.0
16	3323	71	40	89.6	73.9	0.0	0.80	0.10	30.8	2.2	15.2	506.0
17	3323	72	1	89.8	74.5	0.0	0.92	1.01	29.9	0.5	17.7	449.8
18	3332	270	1	71.8	26.4	0.0	203.00	0.31	29.9	3.2	17.7	783.4
19	3332	270	3	71.8	26.4	0.0	28.20	0.02	29.9	0.7	17.7	783.4
20	4911	5	10	75.2	99.0	0.0	192.08	1.80	121.0	6.7	15.2	439.2
21	4911	6	20	130.0	84.5	0.0	3.59	4.20	121.0	0.9	15.2	444.8
22	4911	7	30	76.9	4.2	0.0	377.20	8.10	121.0	32.5 *	15.2	427.6
23	4953	130	1	86.8	72.0	0.0	0.30	2.55	46.0	2.9	15.2	533.8
24	4953	131	2	76.5	70.2	0.0	0.22	0.33	14.9	0.0	0.0	255.2
25	4953	131	4	87.0	70.0	0.0	0.00	0.08	36.6	1.5	6.1	533.2
26	4953	132	2	129.5	83.5	0.0	0.15	0.22	14.9	0.0	0.0	255.2
27	9999	10	0	42.0	10.0	400.0	0.08	0.01	0.0	0.0	0.0	0.0
28	9999	20	0	42.0	30.0	400.0	0.10	0.02	0.0	0.0	0.0	0.0
29	9999	30	0	42.0	50.0	400.0	0.50	0.10	10.1	0.0	0.0	0.0
30	9999	40	0	42.0	70.0	400.0	0.55	0.12	10.1	0.0	0.0	0.0
31	9999	50	0	62.0	10.0	400.0	0.06	0.01	0.0	0.0	0.0	0.0
32	9999	60	0	62.0	10.0	400.0	0.06	0.01	0.0	0.0	0.0	0.0
33	9999	70	0	62.0	30.0	400.0	0.70	0.19	10.1	0.0	0.0	0.0
34	9999	80	0	62.0	30.0	100.0	0.10	0.02	10.1	0.0	0.0	0.0
35	9999	90	0	62.0	50.0	100.0	6.40	1.70	10.1	0.0	0.0	0.0
36	9999	100	0	72.0	50.0	100.0	8.20	2.30	10.1	0.0	0.0	0.0
37	9999	110	0	62.0	60.0	100.0	7.10	1.80	10.1	0.0	0.0	0.0
38	9999	120	0	72.0	60.0	100.0	19.60	5.00	20.1	0.0	0.0	0.0
39	9999	130	0	62.0	70.0	100.0	3.50	1.00	10.1	0.0	0.0	0.0
40	9999	140	0	72.0	70.0	400.0	4.20	1.10	10.1	0.0	0.0	0.0

* NORMALIZED PLUME RISE VALUE (SQUARE METERS PER SECOND)

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

SOURCE DATA

SOURCE NUMBER	SIC CODE	SITE CODE	PROC CODE	SOURCE LOCATION (KILOMETERS) HORIZ	VERT	SOURCE AREA (SQ KM)	EMISSION RATE (TONS/DAY) SO2	PART	STACK HEIGHT (METERS)	STACK DIAMETER (METERS)	EXIT VELOCITY (M/SEC)	EXIT TEMP (DEG K)
41	9999	150	0	62.0	80.0	400.0	0.50	0.11	10.1	0.0	0.0	0.0
42	9999	160	0	82.0	10.0	400.0	0.07	0.01	10.1	0.0	0.0	0.0
43	9999	170	0	82.0	30.0	100.0	0.30	0.01	10.1	0.0	0.0	0.0
44	9999	180	0	82.0	50.0	100.0	1.25	0.25	10.1	0.0	0.0	0.0
45	9999	190	0	82.0	50.0	100.0	3.75	0.75	10.1	0.0	0.0	0.0
46	9999	200	0	82.0	60.0	100.0	5.00	1.60	10.1	0.0	0.0	0.0
47	9999	210	0	82.0	60.0	100.0	5.00	1.60	10.1	0.0	0.0	0.0
48	9999	220	0	92.0	70.0	100.0	2.80	0.70	10.1	0.0	0.0	0.0
49	9999	230	0	82.0	70.0	100.0	1.20	0.30	10.1	0.0	0.0	0.0
50	9999	240	0	92.0	70.0	100.0	3.50	0.90	10.1	0.0	0.0	0.0
51	9999	250	0	82.0	80.0	400.0	0.18	0.04	10.1	0.0	0.0	0.0
52	9999	260	0	82.0	80.0	400.0	0.46	0.09	10.1	0.0	0.0	0.0
53	9999	270	0	102.0	30.0	400.0	0.20	0.05	10.1	0.0	0.0	0.0
54	9999	280	0	92.0	50.0	400.0	0.75	0.15	10.1	0.0	0.0	0.0
55	9999	290	0	102.0	70.0	400.0	0.50	0.10	10.1	0.0	0.0	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 1

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 2

	WIND SPEED CLASS					
WIND DIRECTION	1	2	3	4	5	6
N	0.00046	0.00046	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.00046	0.0	0.0	0.0	0.0
ENE	0.00046	0.0	0.0	0.0	0.0	0.0
E	0.00092	0.00046	0.00046	0.0	0.0	0.0
ESE	0.00092	0.0	0.0	0.0	0.0	0.0
SE	0.00092	0.00046	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.00092	0.0	0.0	0.0	0.0	0.0
W	0.0	0.00046	0.0	0.0	0.0	0.0
WNW	0.00046	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 3

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.00046	0.0	0.00323	0.0	0.0	0.0
NNE	0.0	0.00046	0.00092	0.0	0.0	0.0
NE	0.0	0.0	0.00092	0.0	0.0	0.0
ENE	0.00092	0.00092	0.00461	0.0	0.0	0.0
E	0.00185	0.00277	0.00415	0.00046	0.0	0.0
ESE	0.0	0.00369	0.00461	0.0	0.0	0.0
SE	0.00138	0.00323	0.00277	0.0	0.0	0.0
SSE	0.0	0.00277	0.00092	0.0	0.0	0.0
S	0.0	0.00092	0.00092	0.0	0.0	0.0
SSW	0.0	0.00185	0.00092	0.0	0.0	0.0
SW	0.0	0.00185	0.00092	0.0	0.0	0.0
WSW	0.00046	0.00138	0.00092	0.0	0.0	0.0
W	0.0	0.00138	0.00092	0.0	0.0	0.0
WNW	0.00046	0.00046	0.00092	0.0	0.0	0.0
NW	0.0	0.00092	0.00046	0.0	0.0	0.0
NNW	0.0	0.00138	0.00138	0.0	0.0	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 4

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.0	0.00185	0.05258	0.03828	0.00369	0.0
NNE	0.0	0.00092	0.01338	0.01568	0.00277	0.0
NE	0.0	0.00092	0.01061	0.01476	0.00046	0.0
ENE	0.0	0.00369	0.01061	0.01061	0.00046	0.0
E	0.0	0.00560	0.01476	0.01384	0.00554	0.00138
ESE	0.0	0.00277	0.01015	0.05074	0.01107	0.00138
SE	0.0	0.00138	0.02168	0.04105	0.00507	0.00046
SSE	0.0	0.00185	0.01753	0.02445	0.00277	0.0
S	0.0	0.00046	0.01476	0.02998	0.00231	0.0
SSW	0.0	0.00138	0.00876	0.00876	0.0	0.0
SW	0.0	0.00185	0.00185	0.0	0.0	0.0
WSW	0.0	0.00092	0.00876	0.00046	0.0	0.0
W	0.0	0.00415	0.01292	0.00692	0.0	0.0
WNW	0.0	0.00369	0.01568	0.01107	0.00185	0.0
NW	0.0	0.00231	0.02445	0.01614	0.00277	0.0
NNW	0.0	0.00277	0.02998	0.03275	0.00231	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

STABILITY WIND ROSE DATA

STABILITY CLASS 5

WIND DIRECTION	WIND SPEED CLASS 1	2	3	4	5	6
N	0.00307	0.01245	0.02122	0.0	0.0	0.0
NNE	0.00046	0.00277	0.00461	0.0	0.0	0.0
NE	0.00092	0.00507	0.00277	0.0	0.0	0.0
ENE	0.00323	0.00784	0.00415	0.0	0.0	0.0
E	0.01061	0.01614	0.00554	0.0	0.0	0.0
ESE	0.00554	0.01614	0.01245	0.0	0.0	0.0
SE	0.00138	0.00692	0.00461	0.0	0.0	0.0
SSE	0.00092	0.00507	0.00507	0.0	0.0	0.0
S	0.00277	0.00461	0.00231	0.0	0.0	0.0
SSW	0.00507	0.00646	0.0	0.0	0.0	0.0
SW	0.00092	0.00369	0.0	0.0	0.0	0.0
WSW	0.00185	0.00369	0.0	0.0	0.0	0.0
W	0.00185	0.00646	0.00046	0.0	0.0	0.0
WNW	0.00554	0.01199	0.00369	0.0	0.0	0.0
NW	0.00876	0.01107	0.00369	0.0	0.0	0.0
NNW	0.00323	0.01153	0.00692	0.0	0.0	0.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

REGIONAL DATA

AMBIENT TEMPERATURE (DEGREES KELVIN)	=	283.0
AMBIENT PRESSURE (MILLIBARS)	=	1000.0
MIXING HEIGHT (METERS)	=	1000.0
HALF LIFE (HOURS) FOR:		
SO2	=	3.0
PARTICULATES	=	INFINITE
BACKGROUND CONCENTRATION (MICROGRAMS/CUBIC METER) FOR:		
SO2	=	1.0
PARTICULATES	=	2.0

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

REGRESSION PARAMETERS					
POLLUTANT	Y-INTERCEPT	SLOPE	REGRESSION COEFFICIENTS COMPUTED	5% CONF. LEVEL	COMMENT
SO2	13.10	0.6203	0.0	0.0	VALUES NOT COMPUTED
PARTICULATES	-2.59	1.3315	0.0	0.0	VALUES NOT COMPUTED

IF "NOT STATISTICALLY SIGNIFICANT".....THE COMPUTED SLOPE AND Y-INTERCEPT ARE NOT USED FOR CALIBRATION

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

RECEPTOR CONCENTRATION DATA

RECEPTOR NUMBER	RECEPTOR LOCATION (KILOMETERS) HORIZ	VERT	EXPECTED ARITHMETIC MEAN (MICROGRAMS/CUBIC METER) SO2	PART
1	10.0	80.0	16.2	4.4
2	10.0	95.0	15.9	3.8
3	10.0	110.0	15.6	3.1
4	25.0	80.0	17.1	5.3
5	25.0	95.0	16.5	4.4
6	25.0	110.0	16.1	3.5
7	40.0	80.0	18.7	6.6
8	40.0	95.0	17.3	5.3
9	40.0	110.0	16.9	3.9
10	55.0	80.0	20.9	7.9
11	55.0	95.0	18.6	6.7
12	55.0	110.0	18.4	4.4
13	70.0	80.0	24.1	10.0
14	70.0	95.0	19.0	11.3
15	70.0	110.0	18.6	4.6
16	85.0	80.0	25.0	19.1
17	85.0	95.0	18.7	12.8
18	85.0	110.0	16.1	4.2
19	100.0	80.0	17.7	5.9
20	100.0	95.0	16.5	3.9
21	100.0	110.0	15.4	2.4
22	115.0	80.0	15.9	3.3
23	115.0	95.0	15.3	2.2
24	115.0	110.0	14.9	1.5
25	130.0	80.0	16.0	4.7
26	130.0	95.0	14.9	1.6
27	130.0	110.0	14.6	0.9
28	145.0	80.0	14.7	1.6
29	145.0	95.0	14.5	0.8
30	145.0	110.0	14.4	0.5
31	79.2	63.5	39.4	14.9
32	65.0	56.3	28.7	11.8
33	83.9	71.0	34.5	23.3
34	88.6	68.9	53.2	38.9
35	90.3	72.6	29.1	30.4
36	81.9	96.5	18.4	15.8
37	126.8	85.2	15.8	4.2
38	75.0	17.1	53.7	12.4
39	82.1	54.9	75.1	20.5
40	60.0	71.1	24.3	9.5

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

RECEPTOR CONCENTRATION DATA				
RECEPTOR NUMBER	RECEPTOR LOCATION (KILOMETERS) HORIZ	VERT	EXPECTED ARITHMETIC MEAN (MICROGRAMS/CUBIC METER) SO2	PART
41	88.5	74.6	36.1	30.1
42	91.5	90.0	18.7	10.1
43	90.0	65.3	34.6	27.6
44	75.2	53.5	34.5	12.3
45	70.5	23.0	56.8	18.6
46	71.2	9.5	66.1	10.8

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

NO. POLLUTANT CONCENTRATIONS ABOVE STANDARD OF 35.00 MICROGRAMS PER CUBIC METER

RECEPTOR NUMBER	POLLUTANT CONCENTRATION (MICROGRAMS PER CUBIC METER)				POLLUTANT REDUCTION (PERCENT)	
	ARITHMETIC MEAN CONCENTRATION	EXCESS ABOVE AIR QUALITY STANDARD	CONTRIBUTION FROM POINT SOURCES	CONTRIBUTION FROM AREA SOURCES	NECESSARY FOR POINT SOURCES	NECESSARY FOR ALL SOURCES
39	75.0985	40.0985	66.3259	7.7726	60.4567	54.1151
46	66.0945	31.0945	64.0287	1.0658	48.5634	47.7682
45	56.8112	21.8112	54.0107	1.8006	40.3832	39.0804
38	53.6827	18.6827	51.0625	1.6202	36.5830	35.4627
34	53.2264	18.2264	46.2569	5.9696	39.4026	34.8988
31	39.4142	4.4142	25.9538	12.4604	17.0078	11.4910
41	36.0506	1.0506	29.2968	5.7538	3.5861	2.9974

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

PARTICULATE POLLUTANT CONCENTRATIONS ABOVE STANDARD OF 15.00 MICROGRAMS PER CUBIC METER

RECEPTOR NUMBER	POLLUTANT CONCENTRATION (MICROGRAMS PER CUBIC METER)				POLLUTANT REDUCTION (PERCENT)	
	ARITHMETIC MEAN CONCENTRATION	EXCESS ABOVE AIR QUALITY STANDARD	CONTRIBUTION FROM POINT SOURCES	CONTRIBUTION FROM AREA SOURCES	NECESSARY FOR POINT SOURCES	NECESSARY FOR ALL SOURCES
34	38.8535	23.8535	33.0105	3.8430	72.2604	64.7252
35	30.3762	15.3762	25.5426	2.8336	60.1982	54.1869
41	30.1441	15.1441	25.0035	3.1405	60.5677	53.8091
43	27.6489	12.6489	21.3429	4.3060	59.2652	49.3156
33	23.2638	8.2638	17.9626	3.3013	46.0059	38.8633
39	20.5299	5.5299	13.5323	4.9975	40.8642	29.8430
16	19.0950	4.0950	14.3528	2.7422	28.5308	23.9542
45	18.6352	3.6352	14.7499	1.8853	24.6456	21.8525
36	15.8270	0.8270	12.2082	1.6188	6.7742	5.9811

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

AVERAGING TIME = 0.5 HOURS

SO2 STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	1.00 PERCENTILE CONCENTRATION	5.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	39.41	27.09	203.36	112.67	82.24	852.85	2.38
32	28.72	16.07	197.37	94.67	63.98	1174.59	2.94
33	34.52	22.66	191.76	102.58	73.48	875.73	2.50
34	53.23	39.55	237.81	140.61	106.25	851.66	2.16
35	29.13	17.93	177.63	90.74	63.42	907.23	2.68
36	18.40	10.18	128.25	6..05	41.10	777.41	2.97
37	15.85	8.40	115.68	53.66	35.62	746.82	3.09
38	53.68	37.95	263.70	149.45	110.41	1046.63	2.30
39	75.10	56.72	324.47	194.67	148.24	1121.57	2.12

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

AVERAGING TIME = 1.0 HOURS

SO2 STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	1.00 PERCENTILE CONCENTRATION	5.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	39.41	27.82	194.19	109.91	81.13	672.16	2.31
32	28.72	16.75	187.87	92.53	63.43	880.55	2.83
33	34.52	23.35	182.91	100.08	72.56	681.64	2.42
34	53.23	40.39	227.65	137.18	104.71	687.26	2.10
35	29.13	18.56	169.25	88.58	62.72	694.88	2.59
36	18.40	10.61	122.07	59.69	40.76	581.33	2.86
37	15.85	8.79	110.07	52.49	35.37	553.63	2.96
38	53.68	38.90	252.00	145.78	108.88	831.65	2.23
39	75.10	57.86	310.80	189.94	146.07	909.96	2.06

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

AVERAGING TIME = 3.0 HOURS

SO2 STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	1.00 PERCENTILE CONCENTRATION	5.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	39.41	29.02	179.42	105.22	79.16	461.41	2.19
32	28.72	17.88	172.45	88.78	62.31	558.51	2.65
33	34.52	24.48	168.66	95.82	70.88	458.78	2.29
34	53.23	41.77	211.30	131.42	102.01	489.70	2.01
35	29.13	19.60	155.71	84.86	61.39	455.95	2.44
36	18.40	11.35	112.03	57.28	40.05	367.25	2.68
37	15.85	9.44	100.96	50.43	34.82	345.01	2.77
38	53.68	40.44	233.18	139.58	106.16	578.29	2.12
39	75.10	59.71	288.82	182.01	142.29	653.92	1.97

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

AVERAGING TIME = 1.0 HOURS

PARTICULATE STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	0.10 PERCENTILE CONCENTRATION	1.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	14.88	11.23	114.06	64.32	29.38	196.17	2.12
40	9.55	6.56	95.46	49.26	19.92	178.61	2.38
41	30.14	24.62	176.00	108.25	55.67	278.84	1.89
42	10.13	7.23	91.81	48.99	20.74	166.39	2.28
43	27.65	22.05	176.49	105.56	52.24	287.12	1.96
44	12.26	9.07	100.02	5..27	24.54	175.40	2.17
45	18.64	14.65	125.26	73.70	35.67	206.97	2.00
46	10.76	7.48	104.69	54.53	22.34	194.12	2.35

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

AVERAGING TIME = 8.0 HOURS

PARTICULATE STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	0.10 PERCENTILE CONCENTRATION	1.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	14.88	11.98	91.71	55.46	27.87	102.87	1.93
40	9.55	7.15	75.07	41.99	18.96	85.72	2.14
41	30.14	25.79	145.06	94.66	52.79	159.91	1.75
42	10.13	7.81	72.78	41.92	19.71	82.54	2.06
43	27.65	23.22	144.26	91.86	49.53	159.92	1.81
44	12.26	9.72	79.99	47.51	23.29	90.10	1.98
45	18.64	15.48	101.90	63.96	33.82	113.34	1.84
46	10.76	8.13	82.50	46.53	21.25	94.03	2.12

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

AVERAGING TIME = 24.0 HOURS

PARTICULATE STATISTICAL DATA AT SELECTED RECEPTORS (MICROGRAMS PER CUBIC METER)

SELECTED RECEPTOR NUMBER	EXPECTED ARITHMETIC MEAN	EXPECTED GEOMETRIC MEAN	0.10 PERCENTILE CONCENTRATION	1.00 PERCENTILE CONCENTRATION	10.00 PERCENTILE CONCENTRATION	EXPECTED MAXIMUM CONCENTRATION	STANDARD GEOMETRIC DEVIATION
31	14.88	12.40	80.34	50.62	26.91	73.34	1.83
40	9.55	7.48	64.82	38.02	18.32	58.34	2.01
41	30.14	26.43	129.05	87.23	51.02	119.48	1.67
42	10.13	8.14	63.17	38.07	19.04	57.16	1.94
43	27.65	23.87	127.70	84.37	47.85	117.68	1.72
44	12.26	10.08	69.83	43.28	22.49	63.54	1.87
45	18.64	15.93	89.94	58.64	32.66	82.66	1.75
46	10.76	8.49	71.34	42.16	20.53	64.31	1.99

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM SO2 RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 39		RECEPTOR # 46		RECEPTOR # 45		RECEPTOR # 38		RECEPTOR # 34	
1	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
2	0.9434	1.25%	0.1580	0.24%	0.1688	0.30%	0.2570	0.48%	33.3438	62.65%
3	1.5934	2.12%	0.1633	0.25%	0.1669	0.29%	0.2764	0.51%	6.1467	11.55%
4	34.6787	46.18%	0.4282	0.65%	0.5424	0.95%	0.7394	1.38%	0.9265	1.74%
5	24.3535	32.43%	0.3670	0.56%	0.4643	0.82%	0.6333	1.16%	0.7867	1.48%
6	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
7	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
8	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
9	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
10	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
11	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
12	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
13	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %	0.0	0.0 %
14	0.0047	0.01%	0.0010	0.00%	0.0011	0.00%	0.0016	0.00%	0.0275	0.05%
15	0.0242	0.03%	0.0053	0.01%	0.0054	0.01%	0.0086	0.02%	0.4736	0.89%
16	0.0242	0.03%	0.0053	0.01%	0.0054	0.01%	0.0086	0.02%	0.4736	0.89%
17	0.0275	0.04%	0.0059	0.01%	0.0061	0.01%	0.0097	0.02%	0.5603	1.05%
18	1.1145	1.48%	12.5828	19.04%	29.5303	51.98%	22.6302	42.16%	0.5360	1.01%
19	0.4609	0.61%	4.7636	7.21%	13.5508	23.85%	8.8153	16.42%	0.1960	0.37%
20	1.5716	2.09%	0.4111	0.62%	0.5929	1.04%	0.5765	1.07%	1.8353	3.45%
21	0.0080	0.01%	0.0024	0.00%	0.0028	0.01%	0.0031	0.01%	0.0142	0.03%
22	1.4781	1.97%	45.1303	68.28%	8.9664	15.78%	17.0948	31.84%	0.7747	1.46%
23	0.0162	0.02%	0.0020	0.00%	0.0024	0.00%	0.0032	0.01%	0.1290	0.24%
24	0.0274	0.04%	0.0032	0.00%	0.005.	0.01%	0.0052	0.01%	0.0262	0.05%
25	0.0002	0.00%	0.0000	0.00%	0.0000	0.00%	0.0000	0.00%	0.0070	0.01%
26	0.0009	0.00%	0.0002	0.00%	0.0003	0.00%	0.0003	0.00%	0.0020	0.00%
27	0.0003	0.00%	0.0030	0.00%	0.0020	0.00%	0.0022	0.00%	0.0002	0.00%
28	0.0008	0.00%	0.0024	0.00%	0.0038	0.01%	0.0028	0.01%	0.0004	0.00%
29	0.0082	0.01%	0.0074	0.01%	0.0107	0.02%	0.0085	0.02%	0.0041	0.01%
30	0.0087	0.01%	0.0044	0.01%	0.0071	0.01%	0.0057	0.01%	0.0075	0.01%
31	0.0005	0.00%	0.0037	0.01%	0.0075	0.01%	0.0075	0.01%	0.0003	0.00%
32	0.0005	0.00%	0.0037	0.01%	0.0075	0.01%	0.0075	0.01%	0.0003	0.00%
33	0.0124	0.02%	0.0228	0.03%	0.0359	0.06%	0.0330	0.06%	0.0067	0.01%
34	0.0017	0.00%	0.0065	0.01%	0.0141	0.02%	0.0093	0.02%	0.0007	0.00%
35	0.3570	0.48%	0.1509	0.23%	0.3008	0.53%	0.2056	0.38%	0.0996	0.19%
36	1.1411	1.52%	0.1614	0.24%	0.3015	0.53%	0.2858	0.53%	0.2439	0.46%
37	0.4803	0.64%	0.1174	0.18%	0.2037	0.36%	0.1478	0.28%	0.2009	0.38%
38	2.7776	3.70%	0.2756	0.42%	0.4377	0.77%	0.4509	0.84%	1.0941	2.06%
39	0.1917	0.26%	0.0419	0.06%	0.0691	0.12%	0.0521	0.10%	0.1612	0.30%
40	0.1632	0.22%	0.0314	0.05%	0.0482	0.08%	0.0460	0.09%	0.2460	0.46%

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM SO2 RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 39		RECEPTOR # 44		RECEPTOR # 45		RECEPTOR # 38		RECEPTOR # 34	
41	0.0120	0.02%	0.0037	0.01%	0.0055	0.01%	0.0047	0.01%	0.0189	0.04%
42	0.0009	0.00%	0.0024	0.00%	0.0032	0.01%	0.0030	0.01%	0.0006	0.00%
43	0.0128	0.02%	0.0077	0.01%	0.0132	0.02%	0.0135	0.03%	0.0057	0.01%
44	0.3012	0.40%	0.0169	0.03%	0.0255	0.04%	0.0270	0.05%	0.0774	0.15%
45	0.9036	1.20%	0.0507	0.08%	0.0766	0.13%	0.0811	0.15%	0.2321	0.44%
46	0.5007	0.67%	0.0493	0.07%	0.0770	0.14%	0.0737	0.14%	1.1913	2.24%
47	0.5007	0.67%	0.0493	0.07%	0.0770	0.14%	0.0737	0.14%	1.1913	2.24%
48	0.1723	0.23%	0.0211	0.03%	0.0315	0.06%	0.0307	0.06%	0.4647	0.87%
49	0.0738	0.10%	0.0090	0.01%	0.0135	0.02%	0.0131	0.02%	0.1991	0.37%
50	0.1092	0.14%	0.0196	0.03%	0.0230	0.04%	0.0286	0.05%	0.4474	0.84%
51	0.0035	0.00%	0.0008	0.00%	0.0012	0.00%	0.0011	0.00%	0.0083	0.02%
52	0.0038	0.01%	0.0021	0.00%	0.0030	0.01%	0.0028	0.01%	0.0213	0.04%
53	0.0054	0.01%	0.0015	0.00%	0.0023	0.00%	0.0022	0.00%	0.0039	0.01%
54	0.0294	0.04%	0.0050	0.01%	0.0061	0.01%	0.0071	0.01%	0.0371	0.07%
55	0.0054	0.01%	0.0015	0.00%	0.0017	0.00%	0.0021	0.00%	0.0147	0.03%
BACK-GROUND	1.0000	1.33%	1.0000	1.51%	1.0000	1.76%	1.0000	1.86%	1.0000	1.88%
TOTAL	75.1094	100.01%	66.1024	100.01%	56.8214	100.02%	53.6923	100.02%	53.2383	100.02%

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2 DATE: DECEMBER 29, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM PARTICULATE RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 34		RECEPTOR # 35		RECEPTOR # 41		RECEPTOR # 43		RECEPTOR # 33	
1	0.0064	0.02%	0.0052	0.02%	0.0049	0.02%	0.0069	0.03%	0.0061	0.03%
2	8.2422	21.21%	0.6921	2.28%	1.9763	6.56%	2.2017	7.96%	2.4356	10.47%
3	0.1360	0.35%	0.0559	0.18%	0.0504	0.17%	0.1262	0.46%	0.0960	0.41%
4	0.0168	0.04%	0.0128	0.04%	0.0143	0.05%	0.0123	0.04%	0.0246	0.11%
5	0.3090	0.80%	0.2367	0.78%	0.2641	0.88%	0.2249	0.81%	0.4531	1.95%
6	0.6355	1.64%	0.5623	1.85%	0.5625	1.87%	0.6100	2.21%	0.6713	2.89%
7	15.6643	40.32%	12.4974	41.14%	5.1889	17.21%	12.2781	44.41%	6.4208	27.60%
8	0.0012	0.00%	0.0013	0.00%	0.0013	0.00%	0.0017	0.01%	0.0011	0.00%
9	0.0546	0.14%	0.0417	0.14%	0.0363	0.12%	0.0635	0.23%	0.0455	0.20%
10	0.4553	1.17%	0.4308	1.42%	0.6313	2.09%	0.3001	1.09%	0.5901	2.54%
11	3.7170	9.57%	3.4511	11.36%	4.5562	15.11%	2.9264	10.58%	4.9194	21.15%
12	0.1076	0.28%	0.1316	0.43%	0.2814	0.93%	0.1480	0.54%	0.0693	0.30%
13	0.0248	0.06%	0.0075	0.02%	0.0456	0.15%	0.0431	0.16%	0.0197	0.08%
14	0.0525	0.14%	0.0993	0.33%	0.1695	0.56%	0.0757	0.27%	0.0343	0.15%
15	0.0966	0.25%	0.2575	0.85%	0.3356	1.11%	0.0723	0.26%	0.0376	0.16%
16	0.0966	0.25%	0.2575	0.85%	0.3356	1.11%	0.0723	0.26%	0.0376	0.16%
17	1.0953	2.82%	6.0260	19.84%	9.8673	32.73%	0.9596	3.47%	0.5245	2.25%
18	0.0024	0.01%	0.0021	0.01%	0.0023	0.01%	0.0024	0.01%	0.0031	0.01%
19	0.0016	0.00%	0.0014	0.00%	0.0014	0.00%	0.0016	0.01%	0.0014	0.01%
20	0.0389	0.10%	0.0386	0.13%	0.0423	0.14%	0.0353	0.13%	0.0469	0.20%
21	0.0554	0.14%	0.0678	0.22%	0.0716	0.24%	0.0515	0.19%	0.0560	0.24%
22	0.0555	0.14%	0.0474	0.16%	0.0482	0.16%	0.0569	0.21%	0.0554	0.24%
23	1.7251	4.44%	0.5068	1.67%	0.3675	1.22%	0.8327	3.01%	1.0338	4.44%
24	0.0983	0.25%	0.0557	0.18%	0.0491	0.16%	0.1198	0.43%	0.1200	0.52%
25	0.3047	0.78%	0.0306	0.10%	0.0705	0.23%	0.1054	0.38%	0.2363	1.02%
26	0.0204	0.05%	0.0277	0.09%	0.0311	0.10%	0.0166	0.06%	0.0233	0.10%
27	0.0004	0.00%	0.0003	0.00%	0.0003	0.00%	0.0003	0.00%	0.0004	0.00%
28	0.0009	0.00%	0.0008	0.00%	0.0009	0.00%	0.0008	0.00%	0.0008	0.00%
29	0.0049	0.01%	0.0042	0.01%	0.0042	0.01%	0.0052	0.02%	0.0050	0.02%
30	0.0112	0.03%	0.0098	0.03%	0.0097	0.03%	0.0116	0.04%	0.0115	0.05%
31	0.0009	0.00%	0.0007	0.00%	0.0007	0.00%	0.0008	0.00%	0.0009	0.00%
32	0.0008	0.00%	0.0007	0.00%	0.0007	0.00%	0.0008	0.00%	0.0008	0.00%
33	0.0110	0.03%	0.0101	0.03%	0.0107	0.04%	0.0105	0.04%	0.0120	0.05%
34	0.0011	0.00%	0.0010	0.00%	0.0012	0.00%	0.0011	0.00%	0.0014	0.01%
35	0.1130	0.30%	0.1021	0.34%	0.1102	0.37%	0.1112	0.40%	0.1266	0.54%
36	0.2420	0.62%	0.2169	0.71%	0.2387	0.79%	0.2261	0.82%	0.3020	1.30%
37	0.1867	0.48%	0.1374	0.45%	0.1256	0.42%	0.2114	0.76%	0.1816	0.78%
38	0.7277	1.87%	0.5417	1.78%	0.5493	1.82%	0.9172	3.32%	0.6941	2.98%
39	0.1836	0.47%	0.1409	0.46%	0.1334	0.44%	0.1941	0.70%	0.1889	0.81%
40	0.1905	0.48%	0.1852	0.61%	0.2243	0.74%	0.1844	0.67%	0.2241	0.96%

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM PARTICULATE RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 34		RECEPTOR # 35		RECEPTOR # 41		RECEPTOR # 43		RECEPTOR # 33	
41	0.0172	0.04%	0.0172	0.06%	0.0177	0.06%	0.0157	0.06%	0.0177	0.08%
42	0.0005	0.00%	0.0005	0.00%	0.0005	0.00%	0.0006	0.00%	0.0005	0.00%
43	0.0014	0.00%	0.0012	0.00%	0.0012	0.00%	0.0015	0.01%	0.0011	0.00%
44	0.0409	0.11%	0.0335	0.11%	0.0328	0.11%	0.0443	0.16%	0.0366	0.16%
45	0.1227	0.32%	0.1006	0.33%	0.0984	0.33%	0.1330	0.48%	0.1098	0.47%
46	0.6802	1.75%	0.2731	0.90%	0.3071	1.02%	0.8157	2.95%	0.3605	1.55%
47	0.6802	1.75%	0.2731	0.90%	0.3071	1.02%	0.8157	2.95%	0.3605	1.55%
48	0.2326	0.60%	0.3348	1.10%	0.4231	1.40%	0.2486	0.90%	0.2690	1.16%
49	0.0997	0.26%	0.1435	0.47%	0.1813	0.60%	0.1065	0.39%	0.1153	0.50%
50	0.2572	0.66%	0.2609	0.86%	0.3240	1.07%	0.2072	0.75%	0.2389	1.03%
51	0.0055	0.01%	0.0056	0.02%	0.0044	0.01%	0.0051	0.02%	0.0042	0.02%
52	0.0123	0.03%	0.0126	0.04%	0.0098	0.03%	0.0115	0.04%	0.0095	0.04%
53	0.0040	0.01%	0.0035	0.01%	0.0034	0.01%	0.0047	0.02%	0.0036	0.02%
54	0.0217	0.06%	0.0209	0.07%	0.0201	0.07%	0.0244	0.09%	0.0228	0.10%
55	0.0119	0.03%	0.0137	0.05%	0.0144	0.05%	0.0106	0.04%	0.0120	0.05%
BACK-GROUND	2.0000	5.15%	2.0000	6.58%	2.0000	6.63%	2.0000	7.23%	2.0000	8.60%
TOTAL	38.8715	100.05%	30.3912	100.05%	30.1607	100.06%	27.6649	100.06%	23.2744	100.05%

Figure 2-7. (Continued)

REGION: CENTRAL CITY RUN 2 OF 2

DATE: DECEMBER 29, 1970

SOURCE CONTRIBUTIONS TO FIVE MAXIMUM PARTICULATE RECEPTORS (MICROGRAMS PER CUBIC METER)

SOURCE	RECEPTOR # 34		RECEPTOR # 35		RECEPTOR # 41		RECEPTOR # 43		RECEPTOR # 33	
41	0.0172	0.04%	0.0172	0.06%	0.0177	0.06%	0.0157	0.06%	0.0177	0.08%
42	0.0005	0.00%	0.0005	0.00%	0.0005	0.00%	0.0006	0.00%	0.0005	0.00%
43	0.0014	0.00%	0.0012	0.00%	0.0012	0.00%	0.0015	0.01%	0.0011	0.00%
44	0.0409	0.11%	0.0335	0.11%	0.0328	0.11%	0.0443	0.16%	0.0366	0.16%
45	0.1227	0.32%	0.1006	0.33%	0.0984	0.33%	0.1330	0.48%	0.1093	0.47%
46	0.6802	1.75%	0.2731	0.90%	0.3071	1.02%	0.8157	2.95%	0.3605	1.55%
47	0.6802	1.75%	0.2731	0.90%	0.3071	1.02%	0.8157	2.95%	0.3605	1.55%
48	0.2326	0.60%	0.3348	1.10%	0.4231	1.40%	0.2486	0.90%	0.2690	1.16%
49	0.0997	0.26%	0.1435	0.47%	0.1813	0.60%	0.1065	0.39%	0.1153	0.50%
50	0.2572	0.66%	0.2609	0.86%	0.3240	1.07%	0.2072	0.75%	0.2389	1.03%
51	0.0055	0.01%	0.0056	0.02%	0.0044	0.01%	0.0051	0.02%	0.0042	0.02%
52	0.0123	0.03%	0.0126	0.04%	0.0098	0.03%	0.0115	0.04%	0.0095	0.04%
53	0.0040	0.01%	0.0035	0.01%	0.0034	0.01%	0.0047	0.02%	0.0035	0.02%
54	0.0217	0.06%	0.0209	0.07%	0.0201	0.07%	0.0244	0.09%	0.0223	0.10%
55	0.0119	0.03%	0.0137	0.05%	0.0144	0.05%	0.0106	0.04%	0.0120	0.05%
BACK-GROUND	2.0000	5.15%	2.0000	6.58%	2.0000	6.63%	2.0000	7.23%	2.0000	8.60%
TOTAL	38.8715	100.05%	30.3912	100.05%	30.1607	100.06%	27.6549	100.00%	23.2744	100.05%

Figure 2-7. (Continued)

2.4 Source Contribution File Merge Program Test

Since the regional receptor system has been divided between the two APCP runs, the File Merge Program must be used to produce a single source contribution file for use by the Regional Strategies Program. For the test case, APCP Run 2 of 2 is merged onto (i.e., added to) APCP Run 1 of 2. Thus, the merged receptor numbering system is as follows:

Merged Receptor Numbers	APCP Run 1 of 2 Receptor Numbers	APCP Run 2 of 2 Receptor Numbers
1-60	1-60	
61-106		1-46

There are no user inputs (only JCL cards) or printed output associated with this program.

2.5 Control Cost Program Test

The test case data defining the three types of control cost data are as follows:

Regional Data - shown in Table 2-3

Device Data - the following changes to the pre-set data are to be made:

- Low efficiency cyclone device price coefficient number 2 should be .1.
- Direct Flame Afterburner with Heat Exchange device should have a labor quantity value of 1.01.

Device Applicability Data - since the SIC-process code of the "Additional source" (211900125) does not appear in the device applicability table (Table 5-2, Volume I), the device application for this SIC-process code must be input. It is assumed that devices 001, 002, and 003 are applicable.

Figures 2-8 and 2-9 give the completed data form and program output respectively. The user should note that, in certain cases, negative control efficiency values can occur for the "non-applicable pollutant" when applying devices 27 through 32 (e.g., source 280004110, device 30).

Table 2-3

Control Cost Input Data for Central City

- Regional Data

Item	Cost
Labor	3.00 $/hr.
Water	.0002 $/gal.
Electricity	.017 $/KWH - Power Plants
	.016 $/KWH - Industrial
	.018 $/KWH - Commercial
Interest	8.5 percent

- Regional Fuel Description

Fuel	Grade	% Sulfur Content	Heat Content	% Ash Content
Coal	1	.7>%> .3	29 10^6BTU/ton	7.0
	2	1.3>%> .7	27 10^6BTU/ton	7.0
	3	1.7>%>1.3	27 10^6BTU/ton	7.0
	4	2.3>%>1.7	27 10^6BTU/ton	7.0
	5	5.0>%>2.3	26 10^6BTU/ton	7.0
Residual Oil	1	.7>%> .3	15.2 10^4BTU/gal	
	2	1.3>%> .7	15.2 10^4BTU/gal	
	3	1.7>%>1.3	15.2 10^4BTU/gal	
	4	2.3>%>1.7	15.2 10^4BTU/gal	
	5	5.0>%>2.3	15.2 10^4BTU/gal	
Distillate Oil	1	.4>%> .1	13.9 10^4BTU/gal	
	2	.7>%> .4	13.9 10^4 BTU/gal	
	3	2.0>%> .7	13.9 10^4 BTU/gal	
Gas	1	%=0	10000 BTU/cubic foot	

Table 2-3 (Continued)

- Regional Fuel Cost

Fuel	Grade	Cost		
		Power Plants	Industrial	Commercial
Coal($/ton)	1	8.0	12.0	13.0
	2	6.4	10.0	11.0
	3	6.2	9.5	10.0
	4	6.0	9.0	9.5
	5	4.5	8.0	8.5
Residual Oil($/gal)	1	.061	.074	.076
	2	.057	.069	.071
	3	.056	.068	.070
	4	.055	.067	.069
	5	.054	.065	.067
Distillate Oil($/gal)	1	.12	.12	.18
	2	.10	.10	.16
	3	.094	.095	.16
Gas($/cu.ft.)	1	.00044	.00055	.00066

- Maximum Allowable Sulfur Content Devices

Device No.	Maximum Sulfur Content		
	Coal	Residual Oil	Distillate Oil
30	2.0	1.5	1.0
31	1.0	1.0	.5
32	.5	.5	.3

DATE _____
NAME CØST & CCUPD
PROBLEM NO. _____
NO. OF CARDS _____

80 COLUMN FREE KEYPUNCH FORM

PAGE 1 OF 1
PRIORITY _____
KEYPUNCHED BY _____
VERIFIED BY _____

```
DECEMBER 20, 1970    11
&REGREC    RNAM='CENTRAL CITY',    IREGR= 907,
RATE= 8.5, XLHR= 3.00, ELCS= .016, .017, .018,   FLIQS= .0002,
AFCØST(1,1,1)=  12.0,   8.0,   13.0,   10.0,   6.4,   11.0,
                 9.5,   6.2,   10.0,   9.0,   6.0,   9.5,
                 8.0,   4.5,   8.5,
AFCØST(1,1,2)=   .079,  .061,  .076,  .069,  .057,  .071,
                 .068,  .056,  .070,  .067,  .055,  .069,
                 .065,  .054,  .067,
AFCØST(1,1,3)=   .12,   .12,   .18,   .10,   .10,   .16,
                 .095,  .094,  .16,
AFCØST(1,1,4)=   .00055, .00044, .00066,
AFSCC= 0.3, 0.7, 0.7, 1.3, 1.3, 1.7, 1.7,  2.3,  2.3,  5.0,
AFSCR= 0.3, 0.7, 0.7, 1.3, 1.3, 1.7, 1.7,  2.3,  2.3,  5.0,
AFSCD= 0.1, 0.4, 0.4, 0.7, 0.7, 2.0,
AFSCG= 0.0,
AFNC(1,1)= 29.0 E 06, 15.2 E 04,  13.9 E 04,  10.0 E 02,
AFNC(1,2)= 27.0 E 06, 15.2 E 04,  13.9 E 04,
AFNC(1,3)= 27.0 E 06, 15.2 E 04,  13.9 E 04,
AFNC(1,4)= 27.0 E 06, 15.2 E 04,
AFNC(1,5)= 26.0 E 06, 15.2 E 04,
SLIM= 2.0, 1.5, 1.0,  1.0, 1.0, 0.5,  0.5, 0.5, 0.3,
AFAC= 7.0, 7.0, 7.0, 7.0, 7.0,
&END
&DEVREC
XMPE(09)= .10,
QLAB(1,22)= .13, .25, .50, 1.01,
&END
&DEVAPP
ISIN(1)= 2119, IPRN(1)= 25, IORN(1,1)= 1, 1, 1, 47*0,
[redacted]
&END
```

CCUPD

```
&STRATM  IREGR= 907,
ISIC= 2819, ISIT= 034, IPRC= 20, IDDEV= 30, TAC= 25000.,
&END
```

Figure 2-8. Control Cost Program and Control Cost Update Program Inputs.

CONTROL COST PROGRAM REGION: 907 CENTRAL CITY

RUN DATE DECEMBER 28, 1970 SOURCE DATE DECEMBER 23, 1970

REGION: CENTRAL CITY REGIONAL DATA DATE: DECEMBER 28, 1970

LABOR COST ($/HR) = 3.00 WATER COST ($/GAL) = 0.2E-03 INTEREST RATE (%) = 8.5
ELEC COST PW PLNT ($/KWH) = 0.170E-01 ELEC COST INDUST ($/KWH) = 0.160E-01 ELEC COST COMM ($/KWH) = 0.180E-01

FUEL DATA TABLE

FUEL	GRADE	%SULF CONT MAX	%SULF CONT MIN	HEAT CONT (BTU/UNIT)	%ASH CONT	FUEL COST ($/UNIT) PWR PLNT	INDUST	COMM
COAL	1	0.7	0.3	0.290E 08	7.0	0.80E 01	0.12E 02	0.13E 02
	2	1.3	0.7	0.270E 08	7.0	0.64E 01	0.10E 02	0.11E 02
	3	1.7	1.3	0.270E 08	7.0	0.62E 01	0.95E 01	0.10E 02
	4	2.3	1.7	0.270E 08	7.0	0.60E 01	0.90E 01	0.95E 01
	5	5.0	2.3	0.260E 08	7.0	0.45E 01	0.80E 01	0.85E 01
RESID OIL	1	0.7	0.3	0.152E 06		0.61E-01	0.74E-01	0.76E-01
	2	1.3	0.7	0.152E 06		0.57E-01	0.69E-01	0.71E-01
	3	1.7	1.3	0.152E 06		0.56E-01	0.68E-01	0.70E-01
	4	2.3	1.7	0.152E 06		0.55E-01	0.67E-01	0.69E-01
	5	5.0	2.3	0.152E 06		0.54E-01	0.65E-01	0.67E-01
DIST OIL	1	0.4	0.1	0.139E 06		0.12E 00	0.12E 00	0.18E 00
	2	0.7	0.4	0.139E 06		0.10E 00	0.10E 00	0.16E 00
	3	2.0	0.7	0.139E 06		0.94E-01	0.95E-01	0.16E 00
GAS	1	0.0		0.100E 04		0.44E-03	0.55E-03	0.66E-03

MAXIMUM ALLOWABLE SULFUR CONTENT (%)

FUEL	DEVICE NO 30	31	32
COAL	2.0	1.0	0.5
RESID OIL	1.5	1.0	0.5
DIST OIL	1.0	0.5	0.3

Figure 2-9. Control Cost Program Output.

REGION: CENTRAL CITY — DEVICE DATA — DATE: DECEMBER 28, 1970

ID	DEVICE NAME	RATED EFF SO2	RATED EFF PART	MANUFACTURERS PRICE COEFF 1	2	3	INST FACT	CHEM COST	DISP COST SO2	DISP COST PART	LABOR QUANTITY SML	MED	LGE	X-LG	DEV LFE	PRS DRP	FUEL FACT
1	WET SCRUBBER HI EFFIC	0.0	98.0	0.289E 01	0.228E 00	0.0	2.00	0.0	0.0	1.0	0.50	1.00	2.00	4.00	15	20	0.0
2	WET SCRUBBER MED EFFIC	0.0	90.0	0.289E 01	0.228E 00	0.0	2.00	0.0	0.0	1.0	0.38	0.75	1.50	3.00	15	4	0.0
3	WET SCRUBBER LO EFFIC	0.0	80.0	0.126E 01	0.145E 00	0.0	2.00	0.0	0.0	1.0	0.38	0.75	1.50	3.00	15	3	0.0
4	GRAV COLLECTOR HI EFFIC	0.0	60.0	-0.445E 00	0.326E 00	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	0	0.0
5	GRAV COLLECTOR MED EFFIC	0.0	40.0	-0.420E-01	0.155E 00	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	0	0.0
6	GRAV COLLECTOR LO EFFIC	0.0	30.0	0.300E-02	0.560E-01	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	0	0.0
7	CYCLONE HI EFFIC	0.0	85.0	0.241E 01	0.197E 00	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	4	0.0
8	CYCLONE MED EFFIC	0.0	75.0	0.151E 01	0.157E 00	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	3	0.0
9	CYCLONE LO EFFIC	0.0	60.0	0.244E 00	0.100E 00	0.0	1.00	0.0	0.0	1.0	0.25	0.50	1.00	2.00	15	2	0.0
10	ELECT PRECIP HI EFFIC	0.0	99.0	0.424E 02	0.623E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.50	3.00	6.00	15	0	0.0
11	ELECT PRECIP MED EFFIC	0.0	95.0	0.312E 02	0.441E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.50	3.00	6.00	15	0	0.0
12	ELECT PRECIP LO EFFIC	0.0	90.0	0.197E 02	0.318E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.50	3.00	6.00	15	0	0.0
13	GAS SCRUBBER	80.0	80.0	0.317E 01	0.251E 00	0.0	2.00	10.0	0.0	1.0	0.38	0.75	1.50	3.00	15	5	0.0
14	MIST ELIMINATOR HI VEL	0.0	99.0	0.266E 01	0.325E 00	0.0	1.00	0.0	0.0	0.0	0.25	0.50	1.00	2.00	15	10	0.0
15	MIST ELIMINATOR LO VEL	0.0	85.0	0.177E 01	0.217E 00	0.0	1.00	0.0	0.0	0.0	0.25	0.50	1.00	2.00	15	5	0.0
16	FABRIC FILTER HI TEMP	0.0	99.0	0.145E 01	0.838E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.25	2.50	5.00	15	5	0.0
17	FABRIC FILTER MED TEMP	0.0	99.0	0.348E 01	0.448E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.25	2.50	5.00	15	5	0.0
18	FABRIC FILTER LO TEMP	0.0	99.0	0.266E 01	0.325E 00	0.0	1.00	0.0	0.0	1.0	0.50	1.25	2.50	5.00	15	5	0.0
19	CATALYTIC AFTERBURNER	0.0	95.0	0.755E 01	0.151E 01	0.0	1.00	0.0	0.0	0.0	0.25	0.50	1.00	2.00	15	1	0.49
20	CATALYTIC AB WITH HE	0.0	95.0	0.755E 01	0.151E 01	0.0	2.00	0.0	0.0	0.0	0.25	0.50	1.00	2.00	15	1	0.24
21	DIRECT FLAME AFTERBURNER	0.0	95.0	0.571E 01	0.117E 01	0.0	1.00	0.0	0.0	0.0	0.13	0.25	0.50	1.00	15	1	1.00
22	DIRECT FLAME AB WITH HE	0.0	95.0	0.571E 01	0.117E 01	0.0	2.00	0.0	0.0	0.0	0.13	0.25	0.50	1.01	15	1	0.40
27	ELIMINATE COAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
28	ELIMINATE COAL AND R OIL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
29	SWITCH TO GAS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
30	SULFUR LIMITATION 1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
31	SULFUR LIMITATION 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
32	SULFUR LIMITATION 3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0.0
39	CATALYTIC OXYDATION	90.0	0.0	-0.124E 02	0.167E 01	0.0	0.0	0.0	-27.6	0.0	0.0	0.0	0.0	0.0	15	41	0.0
41	DRY LIMESTONE INJECTION	50.0	0.0	0.0	0.995E-06	-0.603E-16	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	15	0	0.0
42	WET LIMESTONE INJECTION	80.0	98.0	0.111E-05	0.481E-16	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	15	0	0.0
43	H2SO4 PLANT-CONTACT	97.5	0.0	0.0	0.800E 00	0.0	0.0	0.0	-27.6	0.0	0.0	0.0	0.0	0.0	20	0	0.0
44	H2SO4 PLANT-2 CONTACT	99.5	0.0	0.0	0.800E 00	0.0	0.0	0.0	-27.6	0.0	0.0	0.0	0.0	0.0	20	0	0.0
45	SULFUR PLANT	95.0	0.0	0.0	0.810E 00	0.0	0.0	0.0	-15.0	0.0	0.0	0.0	0.0	0.0	20	0	0.0

Figure 2-9. (Continued)

DEVICE APPLICATION CRITERIA FOR NEW SOURCE TYPES

REGION: CENTRAL CITY DATE: DECEMBER 28, 1970

		DEVICE IDENTIFICATION NUMBERS																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
SIC	PSCC	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
2119	25	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Figure 2-9. (Continued)

RÉGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

SOURCE_ID	TYP	PL	SO2EMRT	PRTEMRT	SO2EFF	PRTEFF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MFCT	PLN
211900125	P	1	0.0	0.100	0.0	0.0	0.0	0.30E 03	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	IA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELC
0	0.0	0.0	338	2000	0	0	0	0	0	0	0	0	0
1	0.0	99.0	298	1762	15441	14234	0	431	0	0	0	0	0
2	0.0	90.0	298	1762	11380	10173	0	346	0	0	0	0	0
3	0.0	80.0	298	1762	10680	10121	0	365	0	0	0	0	0

SOURCE_ID	TYP	PL	SO2EMRT	PRTEMRT	SO2EFF	PRTEFF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MFCT	PLN
2800041I0	H	2	25.000	4.000	0.0	82.5	0.57E 09	0.0	3.0	0.28E 08	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	IA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELC
6	0.0	0.0	483	194000	0	0	0	0	385	0	0	0	0
7	0.0	43.0	483	193999	44816	35031	0	71	385	0	0	0	0
10	0.0	98.0	483	193999	92077	52753	0	64	385	0	0	0	0
11	0.0	90.0	483	193999	78591	50461	0	59	385	0	0	0	0
12	0.0	80.0	483	193999	68013	48412	0	58	385	0	0	0	0
16	0.0	99.0	483	193999	100377	60874	0	69	385	0	0	0	0
27	22.2	78.1	483	193999	577965	577965	285	506	0	71745	0	0	0
28	46.7	84.4	483	193999	1596251	1596251	359	1295	0	0	78455	0	0
29	100.0	97.3	483	193999	1171840	1171840	128	825	0	0	0	11437311	0
30	20.5	-492.6	483	193999	187366	187366	100	0	399	0	0	0	0
31	55.1	-492.6	483	193999	333095	333095	66	0	399	0	0	0	0
32	77.5	-491.7	483	193999	503951	503951	71	0	371	0	0	0	0

SOURCE_ID	TYP	PL	SO2EMRT	PRTEMRT	SO2EFF	PRTEFF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MFCT	PLN
2819033O2	P	2	19.100	0.260	0.0	93.7	0.0	0.93E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	IA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELC
0	0.0	0.0	361	86100	0	0	0	0	0	0	0	0	0
13	80.0	20.0	300	71503	104277	89055	18	5494	0	0	0	0	0
14	0.0	99.0	361	86099	73629	36732	0	783	0	0	0	0	0
15	0.0	85.0	361	86099	49569	24936	0	614	0	0	0	0	0

SOURCE_ID	TYP	PL	SO2EMRT	PRTEMRT	SO2EFF	PRTEFF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MFCT	PLN
2819034O2	P	1	23.700	0.210	0.0	0.0	0.0	0.83E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	IA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELC
0	0.0	0.0	361	86100	0	0	0	0	0	0	0	0	0
13	80.0	80.0	300	71600	117770	102540	17	1920	0	0	0	0	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
14	0.0	99.0	361	86099	73629	36732	0	970	0	0	0	0	0
15	0.0	85.0	361	86099	49569	24936	0	760	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMST	PRTEMST	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHEI	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	VECT	PLM
281903420	P	1	20.360	3.900	0.0	81.2	0.36E 09	0.0	3.0	0.23E 08	0.15E 06	0.0	0.10E 04	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	500	86200	0	0	0	0	351	2553	0	8000	0
7	0.0	43.0	500	86199	27871	23200	0	45	351	2553	0	8000	0
10	0.0	98.0	500	86199	69252	46103	0	49	351	2553	0	8000	0
11	0.0	90.0	500	86199	61703	45023	0	48	351	2553	0	8000	0
12	0.0	80.0	500	86199	55380	44035	0	48	351	2553	0	8000	0
16	0.0	99.0	500	86199	63815	46069	0	45	351	2553	0	8000	0
27	35.4	83.4	500	86199	249810	249810	94	210	0	56282	0	8000	0
28	56.7	88.2	500	86199	1046761	1046761	246	833	0	0	61546	8000	0
29	100.0	97.9	500	86199	713823	713823	96	512	0	0	0	8980235	0
30	34.3	-355.6	500	86199	-41772	-41772	-16	0	299	2552	0	8000	0
31	62.5	-355.6	500	86199	68294	68294	14	0	299	2552	0	8000	0
32	81.2	-324.3	500	86199	200904	200904	33	0	278	2552	0	8000	0

SOURCE_ID	TYP	PJ	SO2EMST	PRTEMST	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHEI	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	VECT	PLM
281916003	P	1	0.0	21.900	0.0	0.0	0.0	0.56E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	505	109900	0	0	0	0	0	0	0	0	0
1	0.0	98.0	314	68389	85282	75187	0	10	0	0	0	0	0
2	0.0	90.0	314	68389	48089	37994	0	6	0	0	0	0	0
3	0.0	80.0	314	68389	41532	35321	0	6	0	0	0	0	0
14	0.0	99.0	505	109899	52496	43253	0	6	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMST	PRTEMST	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHEI	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	VECT	PLM
287126001	P	2	0.0	8.000	0.0	80.0	0.0	0.14E 05	3.0	0.0	0.0	0.0	0.0	1.25	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	325	107000	0	0	0	0	0	0	0	0	0
1	0.0	96.4	297	97715	97636	87781	0	34	0	0	0	0	0
2	0.0	82.0	297	97715	47806	37950	0	19	0	0	0	0	0
3	0.0	64.0	297	97715	40806	34747	0	21	0	0	0	0	0
10	0.0	98.4	325	106999	75127	48858	0	26	0	0	0	0	0
18	0.0	99.0	325	106999	59415	50400	0	20	0	0	0	0	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MECT	PLM
291104101	P	2	0.0	0.120	0.0	98.0	0.0	0.27E 07	3.0	0.0	0.0	0.0	0.0	1.10	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK HGT(FT)	EXHAUST VOL(ACFM)	TA_COST($)	OM_COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(B/D)	D OIL UTIL(B/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	811	1360000	0	0	0	0	0	0	0	0	0
10	0.0	92.5	532	913468	651755	134926	0	16086	0	0	0	0	1

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MECT	PLM
295115001	P	1	0.0	0.970	0.0	0.0	0.0	0.55E 05	0.5	0.0	0.0	0.0	0.0	1.00	0

CLV	SO2 EFF(%)	PRT EFF(%)	STK HGT(FT)	EXHAUST VOL(ACFM)	TA_COST($)	OM_COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(B/D)	D OIL UTIL(B/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	394	26900	0	0	0	0	0	0	0	0	0
1	0.0	95.0	303	20725	7869	4611	0	22	0	0	0	0	0
2	0.0	90.0	303	20725	5779	2521	0	18	0	0	0	0	0
3	0.0	80.0	303	20725	4254	2391	0	15	0	0	0	0	0
7	0.0	85.0	394	26899	3744	1887	0	12	0	0	0	0	0
8	0.0	75.0	394	26899	3109	1729	0	11	0	0	0	0	0
9	0.0	60.0	394	26899	2259	1553	0	10	0	0	0	0	0
10	0.0	99.0	394	26899	8932	3154	0	25	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MECT	PLM
324110001	P	1	0.0	2.790	0.0	98.0	0.0	0.86E 06	3.0	0.0	0.0	0.0	0.0	1.00	0

CLV	SO2 EFF(%)	PRT EFF(%)	STK HGT(FT)	EXHAUST VOL(ACFM)	TA_COST($)	OM_COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(B/D)	D OIL UTIL(B/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	561	298000	0	0	0	0	0	0	0	0	0
10	0.0	92.5	532	284368	235491	97352	0	249	0	0	0	0	1
16	0.0	99.0	532	286368	249044	105942	0	247	0	0	0	0	1

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	MECT	PLM
329505101	P	1	0.0	19.180	0.0	0.0	0.0	0.48E 06	1.0	0.0	0.0	0.0	0.0	1.00	0

CLV	SO2 EFF(%)	PRT EFF(%)	STK HGT(FT)	EXHAUST VOL(ACFM)	TA_COST($)	OM_COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTIL(T/D)	R OIL UTIL(B/D)	D OIL UTIL(B/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	294	187500	0	0	0	0	0	0	0	0	0
1	0.0	98.0	294	187430	69629	53143	0	10	0	0	0	0	0
2	0.0	90.0	294	187430	39488	23002	0	6	0	0	0	0	0
3	0.0	80.0	294	187430	30866	20590	0	5	0	0	0	0	0
7	0.0	85.0	294	187499	26658	17180	0	4	0	0	0	0	0
8	0.0	75.0	294	187499	22220	14760	0	4	0	0	0	0	0
9	0.0	60.0	294	187499	16580	12005	0	3	0	0	0	0	0
10	0.0	99.0	294	187499	41760	26443	0	6	0	0	0	0	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	PLM
331211101	P	2	0.0	1.000	0.0	99.7	0.0	0.29E 06	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	475	600000	0	0	0	0	0	0	0	0	0
1	0.0	80.0	311	392868	339278	288815	0	1161	0	0	0	0	0
10	0.0	89.0	475	599999	216219	115977	0	665	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	PLM
331211102	P	2	0.0	0.740	0.0	99.3	0.0	0.44E 06	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	833	835000	0	0	0	0	0	0	0	0	0
1	0.0	80.0	346	346973	330982	261163	0	1531	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	PLM
331211103	P	2	0.230	0.270	0.0	82.9	0.0	0.13E 06	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	444	383000	0	0	0	0	0	0	0	0	0
7	0.0	43.0	444	387999	87839	68849	0	2072	0	0	0	0	0
10	0.0	98.0	444	387999	171174	102742	0	1772	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	PLM
332307130	S	2	0.900	0.100	0.0	0.0	0.23E 10	0.0	3.0	0.0	0.0	0.14E 06	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	505	119000	0	0	0	0	0	0	15900	0	0
10	0.0	75.0	505	118999	74818	46748	0	2733	0	0	15900	0	0
16	0.0	75.0	505	118999	73547	49181	0	2686	0	0	15900	0	0
20	99.0	92.0	505	118999	-86011	-86011	-294	-2856	0	0	0	2317909	0
31	11.8	0.0	505	118999	29017	29017	844	0	0	0	15900	0	0
32	49.6	0.0	505	118999	145087	145087	1002	0	0	0	15900	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	PLM
332307140	S	2	0.800	0.100	0.0	0.0	0.23E 10	0.0	3.0	0.0	0.0	0.14E 06	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFC($/T)	PRT EFC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	505	119000	0	0	0	0	0	0	15900	0	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC(S/T)	PRT REC($/T)	COAL UTIL(%)	R OIL UTIL(%)	D OIL UTIL(%)	GAS UTIL(CF/D)	ELG
10	0.0	75.0	505	118999	74818	46748	0	2733	0	0	15900	0	0
16	0.0	75.0	505	118999	73547	49181	0	2686	0	0	15900	0	0
29	99.9	82.5	505	118999	-86011	-86011	-294	-2856	0	0	0	2317809	0
31	11.8	0.0	505	118999	29017	29017	844	0	0	0	15900	0	0
32	49.6	0.0	505	118999	145087	145087	1002	0	0	0	15900	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	ELV
332307201	P	2	0.920	1.010	0.0	0.0	0.0	0.11E 04	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC(S/T)	PRT REC($/T)	COAL UTIL(%)	R OIL UTIL(%)	D OIL UTIL(%)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	449	6200	0	0	0	0	0	0	0	0	0
1	0.0	98.0	309	4260	17613	16060	0	46	0	0	0	0	0
2	0.0	90.0	309	4260	12431	10877	0	37	0	0	0	0	0
3	0.0	80.0	309	4260	11502	10724	0	39	0	0	0	0	0
7	0.0	85.0	449	6199	8438	7562	0	26	0	0	0	0	0
8	0.0	75.0	449	6199	7953	7356	0	28	0	0	0	0	0
9	0.0	60.0	449	6199	7339	7130	0	33	0	0	0	0	0
16	0.0	99.0	449	6199	15954	14354	0	43	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	ELV
333227001	P	1	203.000	0.310	0.0	99.0	0.0	0.96E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC(S/T)	PRT REC($/T)	COAL UTIL(%)	R OIL UTIL(%)	D OIL UTIL(%)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	783	302000	0	0	0	0	0	0	0	0	0
13	80.0	20.0	341	131637	665977	637446	11	29428	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	ELV
333227003	P	1	28.200	0.020	0.0	99.0	0.0	0.44E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC(S/T)	PRT REC($/T)	COAL UTIL(%)	R OIL UTIL(%)	D OIL UTIL(%)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	783	16000	0	0	0	0	0	0	0	0	0
10	0.0	92.5	532	11114	32248	13825	0	4775	0	0	0	0	1
13	80.0	20.0	341	6974	96120	93522	11	65835	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHFT	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UNCT	ELV
491100510	B	1	192.080	1.800	0.0	99.2	0.48E 10	0.0	3.0	0.23E 08	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC(S/T)	PRT REC($/T)	COAL UTIL(%)	R OIL UTIL(%)	D OIL UTIL(%)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	439	1128000	0	0	0	0	3370	0	0	0	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY CONTROL COST DATA DATE: DECEMBER 28, 1970

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTL(T/D)	R OIL UTL(G/D)	D OIL UTL(G/D)	GAS UTL(CF/D)	ELG
10	0.0	89.0	439	1127999	411263	231798	0	703	3370	0	0	0	0
11	0.0	45.0	439	1127999	345401	218071	0	1168	3370	0	0	0	0
16	0.0	99.0	439	1127999	524259	296252	0	806	3370	0	0	0	0
27	36.1	-36.7	439	1127999	4632438	4632438	182	0	0	515863	0	0	0
28	56.4	-21.4	439	1127999	13819351	13819351	349	0	0	0	564109	0	0
29	100.0	59.2	439	1127999	7671891	7671891	109	19739	0	0	0	82236112	0
30	32.4	******	439	1127999	751692	751692	33	0	2870	0	0	0	0
31	61.8	******	439	1127999	1170820	1170820	27	0	2870	0	0	0	0
32	80.9	******	439	1127999	2269224	2269224	40	0	2672	0	0	0	0
39	90.0	0.0	439	1127999	600133	-91474	9	0	3370	0	0	0	0
41	50.0	0.0	439	1127999	1124366	716038	32	0	3370	0	0	0	0
42	80.0	98.0	439	1127999	1278564	643619	22	1985	3370	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHEI	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UECI	PLM
491100620	B	2	3.590	4.200	0.0	0.0	0.48E 09	0.0	3.0	0.23E 08	0.0	0.0	0.0	1.25	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTL(T/D)	R OIL UTL(G/D)	D OIL UTL(G/D)	GAS UTL(CF/D)	ELG
0	0.0	0.0	444	21100	0	0	0	0	63	0	0	0	0
7	0.0	85.0	444	21099	11912	10330	0	9	63	0	0	0	0
8	0.0	75.0	444	21099	10723	9562	0	9	63	0	0	0	0
9	0.0	60.0	444	21099	9285	8718	0	10	63	0	0	0	0
10	0.0	99.0	444	21099	29413	16033	0	19	63	0	0	0	0
11	0.0	95.0	444	21099	25486	15720	0	17	63	0	0	0	0
12	0.0	90.0	444	21099	21783	15423	0	15	63	0	0	0	0
16	0.0	99.0	444	21099	22336	17729	0	14	63	0	0	0	0
27	36.1	99.0	444	21099	86600	86600	183	57	0	9643	0	0	0
28	56.4	99.1	444	21099	258344	258344	349	170	0	0	10545	0	0
29	100.0	99.7	444	21099	143421	143421	109	93	0	0	0	1537353	0
30	32.4	14.9	444	21099	14052	14052	33	61	53	0	0	0	0
31	61.8	14.9	444	21099	21887	21887	27	96	53	0	0	0	0
32	80.9	20.7	444	21099	42421	42421	40	133	49	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMBT	PRTEMBT	SO2EF	PRTEF	RATCAP	MX PROC RATE	SHEI	COAL HEAT	R OIL HEAT	D OIL HEAT	GAS HEAT	UECI	PLM
491100730	B	2	377.200	8.100	0.0	97.5	0.81E 10	0.0	3.0	0.23E 08	0.0	0.0	0.10E 04	1.00	32

DEV	SO2 EFF(%)	PRT EFF(%)	STK TMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 EFF($/T)	PRT EFF($/T)	COAL UTL(T/D)	R OIL UTL(G/D)	D OIL UTL(G/D)	GAS UTL(CF/D)	ELG
0	0.0	0.0	427	2640000	0	0	0	0	6616	0	0	6340000	0
10	0.0	92.5	427	2639999	738847	332515	0	270	6616	0	0	6340000	0
11	0.0	62.5	427	2639999	588098	300176	0	318	6616	0	0	6340000	0
16	0.0	99.0	427	2639999	1051794	518629	0	359	6616	0	0	6340000	0
27	36.1	45.6	427	2639999	9094436	9094436	182	6752	0	1012745	0	6339999	0
28	56.4	51.6	427	2639999	27130256	27130256	349	17799	0	0	1107463	6339999	0
29	100.0	83.3	427	2639999	15061508	15061508	109	6116	0	0	0	167786512	0

Figure 2-9. (Continued)

REGION: CENTRAL CITY — CONTROL COST DATA — DATE: DECEMBER 28, 1970

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC($/T)	PRT REC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
30	32.4	******	427	2639999	1475736	1475736	33	0	5635	0	0	6339999	0
31	61.8	******	427	2639999	2298569	2298569	27	0	5635	0	0	6339999	0
32	80.9	******	427	2639999	4454964	4454964	40	0	5247	0	0	6339999	0
39	90.0	0.0	427	2639999	2094821	451936	16	0	6616	0	0	6340000	0
41	50.0	0.0	427	2639999	1875702	1381649	27	0	6616	0	0	6340000	0
42	80.0	98.0	427	2639999	2013268	1138340	18	694	6616	0	0	6340000	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	VEGT	PLM
495313001	S	1	0.300	2.550	0.0	0.0	0.0	0.25E 05	3.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC($/T)	PRT REC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	533	212000	0	0	0	0	0	0	0	0	0
1	0.0	98.0	317	126009	130008	111503	0	142	0	0	0	0	0
2	0.0	90.0	317	126009	61212	42708	0	73	0	0	0	0	0
3	0.0	80.0	317	126009	50290	38730	0	67	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	VEGT	PLM
495313102	S	1	0.220	0.330	0.0	0.0	0.0	0.10E 05	1.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC($/T)	PRT REC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	255	0	0	0	0	0	0	0	0	0	0

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	VEGT	PLM
495313104	S	2	0.003	0.080	0.0	0.0	0.0	0.30E 05	1.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC($/T)	PRT REC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	533	62400	0	0	0	0	0	0	0	0	0
1	0.0	98.0	317	37121	18835	12653	0	658	0	0	0	0	0
2	0.0	90.0	317	37121	11654	5472	0	443	0	0	0	0	0
3	0.0	80.0	317	37121	3811	5089	0	377	0	0	0	0	0
10	0.0	99.0	532	63015	53160	14578	0	1838	0	0	0	0	1

SOURCE_ID	TYP	PJ	SO2EMRT	PRTEMRT	SO2EF	PRTEF	RATCAP	MX_PROC_RATE	SHFT	COAL_HEAT	R_OIL_HEAT	D_OIL_HEAT	GAS_HEAT	VEGT	PLM
495313202	S	2	0.150	0.220	0.0	0.0	0.0	0.69E 04	1.0	0.0	0.0	0.0	0.0	1.00	0

DEV	SO2 EFF(%)	PRT EFF(%)	STK IMP(K)	EXHAUST VOL(ACFM)	TA COST($)	OM COST($)	SO2 REC($/T)	PRT REC($/T)	COAL UTIL(T/D)	R OIL UTIL(G/D)	D OIL UTIL(G/D)	GAS UTIL(CF/D)	ELG
0	0.0	0.0	255	0	0	0	0	0	0	0	0	0	0

Figure 2-9. (Continued)

Since, for these cases, the device does not apply, the strategy summary results will not be effected.

2.6 Control Cost Update (CCUPD) Program Test

The Control Cost File is to be updated by changing the total annual device cost for source 281903420, using device 030, to $25000. Figures 2-8 and 2-10 illustrate the completed data form and program output respectively.

2.7 Emission Standards (ESTAND) Program Test

Since this program must provide all of the emission standards application results for the various strategies, the complete set of strategies must be defined at this point. Table 2-4 contains a complete description of the four strategies applied to the test region. Figure 2-11 gives the completed data form for the ESTAND program, where the appropriate input data was taken from Table 2-4. In addition to the emission standards specified in Table 2-4, EST25 is applied to SO_2 fuel combustion sources in State A and EST23 is applied to SO_2 fuel combustion sources in State B. Figure 2-12 gives the resulting program output.

2.8 Emission Standards Update (ESUPD) Program Test

The following three modifications are to be made to the test case Emission Standards File:

- for source 281903402 and emission standard EST13, CHANGE the total cost to $167281 and the SO_2 removal efficiency to 85.0%.
- for source 333227001 and emission standard EST13, CHANGE the total cost to $3665078 and the SO_2 removal efficiency to 97.5%.
- ADD application of emission standard 24 to source 491100510. The application data consists of: total cost - $1443872, SO_2 removal efficiency = 57.1%, particulate removal efficiency

```
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&STRATM
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HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
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  3.0000000    ,STKHTN=  15.240000    ,STKDIA= 0.57219911    ,EXVELN=  15.240000    ,TEXN=  298.32617    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0          ,ACFMN=  1762.1162    ,TAC=  15441.410    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
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HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
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&STRATM
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DEVEFS= 0.0          ,DEVEFP= 0.79999965    ,EMRATS= 0.0          ,EMRATP= 0.99999964E-01,PRCRTM=  300.00000    ,SHIFTS=
  3.0000000    ,STKHTN=  15.240000    ,STKDIA= 0.57219911    ,EXVELN=  15.240000    ,TEXN=  298.32617    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0          ,ACFMN=  1762.1162    ,TAC=  10680.539    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=          0,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.0          ,EMRATS=  25.000000    ,EMRATP=  4.0000000    ,PRCRTM= 0.0          ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.5603199    ,EXVELN=  17.678391    ,TEXN=  483.71582    ,RATCAP= 0.56699981E 09,
CONEFS= 0.0          ,CONEFP= 0.82499981    ,ACFMN=  194000.00    ,TAC= 0.0          ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. Control Cost Update Program Output.

```
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=          7,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.42999923     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  44816.801     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=         10,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.97999954     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  92077.063     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=         11,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.89999938     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  78591.125     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=         12,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.79999954     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  68013.563     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=         16,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.98999965     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  100377.44     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  385.00000     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2800,ISIT=         41,IPRC=         10,IDDEV=         27,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.22222441      ,DEVEFP= 0.78132504     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  577965.00     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR=  71745.625     ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       2800,ISIT=         41,IPRC=          10,IDDEV=          28,PRTYPE= -64.250977     ,POLJUR=           2,
DEVEFS= 0.48661494     ,DEVEFP= 0.84404898     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  1596251.0     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC= 0.0                                                  ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2800,ISIT=         41,IPRC=          10,IDDEV=          29,PRTYPE= -64.250977     ,POLJUR=           2,
DEVEFS= 0.99989599     ,DEVEFP= 0.97272187     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  1171840.0     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0          ,AMD= 0.0          ,AMG=  11437311.     ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2800,ISIT=         41,IPRC=          10,IDDEV=          30,PRTYPE= -64.250977     ,POLJUR=           2,
DEVEFS= 0.20493877     ,DEVEFP= -4.9259176     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  187366.00     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC=  399.25903     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS=  14.629983      ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2800,ISIT=         41,IPRC=          10,IDDEV=          31,PRTYPE= -64.250977     ,POLJUR=           2,
DEVEFS= 0.55061764     ,DEVEFP= -4.9259176     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  333095.00     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC=  399.25903     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS=  7.3149910      ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2800,ISIT=         41,IPRC=          10,IDDEV=          32,PRTYPE= -64.250977     ,POLJUR=           2,
DEVEFS= 0.77471280     ,DEVEFP= -4.5172338     ,EMRATS=  25.000000     ,EMRATP=  4.0000000     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.5603189     ,EXVELN=  17.678391     ,TEXN=  483.71582     ,RATCAP= 0.56699981E 09,
CONEFS= 0.0             ,CONEFP= 0.82499981     ,ACFMN=  193999.94     ,TAC=  503951.00     ,HEC= 0.39346976E 13,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC=  371.72388     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS=  3.6574945      ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         33,IPRC=          2,IDDEV=           0,PRTYPE=-0.12427946E 28,POLJUR=           2,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS=  19.099991     ,EMRATP= 0.25999999     ,PRCRTM=  92500.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.8592796     ,EXVELN=  15.240000     ,TEXN=  361.95190     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.93699974     ,ACFMN=  86100.000     ,TAC= 0.0               ,HEC= 0.0               ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          33,IPRC=          2,IDDEV=          13,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.79999983     ,DEVEFP= 0.19999999     ,EMRATS=  19.099991     ,EMRATP= 0.25999999     ,PRCRTM=  92500.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.6943655     ,EXVELN=  15.240000     ,TEXN=  300.59131     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.93699974     ,ACFMN=  71503.688     ,TAC=  104277.81     ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          33,IPRC=          2,IDDEV=          14,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.98999965     ,EMRATS=  19.099991     ,EMRATP= 0.25999999     ,PRCRTM=  92500.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.8592787     ,EXVELN=  15.240000     ,TEXN=  361.95190     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.93699974     ,ACFMN=  86099.938     ,TAC=  73629.938     ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          33,IPRC=          2,IDDEV=          15,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.84999967     ,EMRATS=  19.099991     ,EMRATP= 0.25999999     ,PRCRTM=  92500.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.8592787     ,EXVELN=  15.240000     ,TEXN=  361.95190     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.93699974     ,ACFMN=  86099.938     ,TAC=  49569.117     ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          34,IPRC=          2,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0           ,DEVEFP= 0.0            ,EMRATS=  23.699997     ,EMRATP= 0.20999998     ,PRCRTM=  83400.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.8592796     ,EXVELN=  15.240000     ,TEXN=  361.39600     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  86100.000     ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          34,IPRC=          2,IDDEV=          13,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.79999983     ,DEVEFP= 0.79999965     ,EMRATS=  23.699997     ,EMRATP= 0.20999998     ,PRCRTM=  83400.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.6955166     ,EXVELN=  15.240000     ,TEXN=  300.53735     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  71600.813     ,TAC=  117770.56     ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=          34,IPRC=          2,IDDEV=          14,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0           ,DEVEFP= 0.98999965     ,EMRATS=  23.699997     ,EMRATP= 0.20999998     ,PRCRTM=  83400.000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  1.8592787     ,EXVELN=  15.240000     ,TEXN=  361.39600     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  86099.938     ,TAC=  73629.938     ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
```

```
907,ISIC=       2819,ISIT=         34,IPRC=          2,IDDEV=         15,PRTYPE=-0.12427946E 28,POLJUR=          1,
      ,DEVEFP= 0.84999967    ,EMRATS=  23.699997    ,EMRATP= 0.20999998    ,PRCRTM=  83400.000    ,SHIFTS=
,STKHTN=  29.869995    ,STKDIA=  1.8592787    ,EXVELN=  15.240000    ,TEXN=  361.39600    ,RATCAP= 0.0          ,
      ,CONEFP= 0.0           ,ACFMN=  86099.938    ,TAC=  49569.117    ,HEC= 0.0            ,HER= 0.0          ,
   ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

```
907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=          0,PRTYPE= -64.250977    ,POLJUR=          1,
      ,DEVEFP= 0.0           ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
,STKHTN=  24.078995    ,STKDIA=  2.1945591    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
      ,CONEFP= 0.81299967    ,ACFMN=  86200.000    ,TAC= 0.0              ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
   ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

```
907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=          7,PRTYPE= -64.250977    ,POLJUR=          1,
      ,DEVEFP= 0.42999923    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
      ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  27871.027    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
   ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

```
907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         10,PRTYPE= -64.250977    ,POLJUR=          1,
      ,DEVEFP= 0.97999954    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
      ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  69252.438    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
   ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

```
907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         11,PRTYPE= -64.250977    ,POLJUR=          1,
      ,DEVEFP= 0.89999938    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
      ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  61703.410    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
   ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

```
907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         12,PRTYPE= -64.250977    ,POLJUR=          1,
      ,DEVEFP= 0.79999954    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
      ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  55380.559    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
   ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         16,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.0           ,DEVEFP= 0.98999965    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  63815.262    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC=  351.00000    ,AMR=  2553.0000    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         27,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.35394913    ,DEVEFP= 0.83449C36    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  249810.00    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC= 0.0          ,AMR=  56282.387    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         28,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.56701523    ,DEVEFP= 0.88196015    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  1046761.0    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC= 0.0          ,AMR= 0.0           ,AMD=  61546.211    ,AMG=  8000.0000    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         29,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.99991214    ,DEVEFP= 0.97934091    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  713823.00    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC= 0.0          ,AMR= 0.0           ,AMD= 0.0           ,AMG=  8980235.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         30,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.34300685    ,DEVEFP= -3.5564632    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  25000.000    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC=  299.00000    ,AMR=  2552.9983    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
  1.0000000    ,AEMIS=  13.641660    ,IGAS=          0,PLUME= 0.0           ,IUSE=          3
&END
&STRATM
IREGR=        907,ISIC=       2819,ISIT=         34,IPRC=         20,IDDEV=         31,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.62529266    ,DEVEFP= -3.5564632    ,EMRATS=  20.359985    ,EMRATP=  3.8999996    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  24.078995    ,STKDIA=  2.1945581    ,EXVELN=  17.678391    ,TEXN=  500.39600    ,RATCAP= 0.35799987E 09,
CONEFS= 0.0           ,CONEFP= 0.81299967    ,ACFMN=  86199.938    ,TAC=  68294.000    ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0         ,HEG= 0.29200000E 10,AMC=  299.00000    ,AMR=  2552.9983    ,AMD= 0.0           ,AMG=  8000.0000    ,OUSE=
  1.0000000    ,AEMIS=  6.8714428    ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         34,IPRC=          20,IDDEV=          32,PRTYPE= -64.250977     ,POLJUR=           1,
DEVEFS= 0.81167054     ,DEVEFP= -3.2427425     ,EMRATS=  20.359985     ,EMRATP=  3.8999996     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  24.078995     ,STKDIA=  2.1945581     ,EXVELN=  17.678391     ,TEXN=  500.39600     ,RATCAP= 0.35799987E 09,
CONEFS= 0.0            ,CONEFP= 0.81299967     ,ACFMN=  86199.938     ,TAC=  200904.00     ,HEC= 0.29466443E 13,HER= 0.14164034E 12,
HED= 0.0          ,HEG= 0.29200C00E 10,AMC=  278.37915     ,AMR=  2552.9983     ,AMD= 0.0              ,AMG=  8000.0000     ,OUSE=
  1.0000000     ,AEMIS=  3.4357204     ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         160,IPRC=          3,IDDEV=           0,PRTYPE=-0.12427946E 28,POLJUR=           1,
DEVEFS= 0.0            ,DEVEFP= 0.0            ,EMRATS= 0.0            ,EMRATP=  21.899994     ,PRCRTM=  56300.000     ,SHIFTS=
  3.0000000     ,STKHTN=  22.859985     ,STKDIA=  2.1031199     ,EXVELN=  15.240000     ,TEXN=  505.39990     ,RATCAP= 0.0              ,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  109900.00     ,TAC= 0.0              ,HEC= 0.0              ,HER= 0.0              ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         160,IPRC=          3,IDDEV=           1,PRTYPE=-0.12427946E 28,POLJUR=           1,
DEVEFS= 0.0            ,DEVEFP= 0.97999966     ,EMRATS= 0.0            ,EMRATP=  21.899994     ,PRCRTM=  56300.000     ,SHIFTS=
  3.0000000     ,STKHTN=  22.859985     ,STKDIA=  1.6590538     ,EXVELN=  15.240000     ,TEXN=  314.50562     ,RATCAP= 0.0              ,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  68389.688     ,TAC=  85282.188     ,HEC= 0.0              ,HER= 0.0              ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         160,IPRC=          3,IDDEV=           2,PRTYPE=-0.12427946E 28,POLJUR=           1,
DEVEFS= 0.0            ,DEVEFP= 0.89999968     ,EMRATS= 0.0            ,EMRATP=  21.899994     ,PRCRTM=  56300.000     ,SHIFTS=
  3.0000000     ,STKHTN=  22.859985     ,STKDIA=  1.6590538     ,EXVELN=  15.240000     ,TEXN=  314.50562     ,RATCAP= 0.0              ,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  68389.688     ,TAC=  48089.383     ,HEC= 0.0              ,HER= 0.0              ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         160,IPRC=          3,IDDEV=           3,PRTYPE=-0.12427946E 28,POLJUR=           1,
DEVEFS= 0.0            ,DEVEFP= 0.79999965     ,EMRATS= 0.0            ,EMRATP=  21.899994     ,PRCRTM=  56300.000     ,SHIFTS=
  3.0000000     ,STKHTN=  22.859985     ,STKDIA=  1.6590538     ,EXVELN=  15.240000     ,TEXN=  314.50562     ,RATCAP= 0.0              ,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  68389.688     ,TAC=  41532.242     ,HEC= 0.0              ,HER= 0.0              ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2819,ISIT=         160,IPRC=          3,IDDEV=          14,PRTYPE=-0.12427946E 28,POLJUR=           1,
DEVEFS= 0.0            ,DEVEFP= 0.98999965     ,EMRATS= 0.0            ,EMRATP=  21.899994     ,PRCRTM=  56300.000     ,SHIFTS=
  3.0000000     ,STKHTN=  22.859985     ,STKDIA=  2.1031189     ,EXVELN=  15.240000     ,TEXN=  505.39990     ,RATCAP= 0.0              ,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  109899.94     ,TAC=  52496.379     ,HEC= 0.0              ,HER= 0.0              ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=           0,PLUME= 0.0            ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.0            ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 2.0421591    ,EXVELN= 15.240000    ,TEXN= 325.25586    ,RATCAP= 0.0          ,
CONEFS= 0.0              ,CONEFP= 0.79999983   ,ACFMN= 107000.00    ,TAC= 0.0             ,HEC= 0.0           ,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=          1,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.96399945   ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 1.9515429    ,EXVELN= 15.240000    ,TEXN= 297.03174    ,RATCAP= 0.0          ,
[illegible]
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=          2,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.81999969   ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 1.9515429    ,EXVELN= 15.240000    ,TEXN= 297.03174    ,RATCAP= 0.0          ,
CONEFS= 0.0              ,CONEFP= 0.79999983   ,ACFMN= 97715.000    ,TAC= 47806.313       ,HEC= 0.0           ,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=          3,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.63999981   ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 1.9515429    ,EXVELN= 15.240000    ,TEXN= 297.03174    ,RATCAP= 0.0          ,
CONEFS= 0.0              ,CONEFP= 0.79999983   ,ACFMN= 97715.000    ,TAC= 40806.328       ,HEC= 0.0           ,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=         10,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.98399961   ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 2.0421581    ,EXVELN= 15.240000    ,TEXN= 325.25586    ,RATCAP= 0.0          ,
CONEFS= 0.0              ,CONEFP= 0.79999983   ,ACFMN= 106999.94    ,TAC= 75127.750       ,HEC= 0.0           ,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2871,ISIT=        260,IPRC=          1,IDDEV=         18,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0              ,DEVEFP= 0.98999965   ,EMRATS= 0.0            ,EMRATP= 8.0000000    ,PRCRTM= 13700.000    ,SHIFTS=
  3.0000000     ,STKHTN= 17.982986    ,STKDIA= 2.0421581    ,EXVELN= 15.240000    ,TEXN= 325.25586    ,RATCAP= 0.0          ,
CONEFS= 0.0              ,CONEFP= 0.79999983   ,ACFMN= 106999.94    ,TAC= 59415.883       ,HEC= 0.0           ,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0999994
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.0999994
&END
&STRATM
IREGR=
DEVEFS= 0.0
  0.50000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  0.50000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  0.50000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  0.50000000
CONEFS= 0.0
HED= 0.0
  1.0000000
&END
```

```
907,ISIC=      2911,ISIT=       61,IPRC=        1,IDDEV=        0,PRTYPE=-0.12427946E 28,POLJUR=        2,
        ,DEVEFP= 0.0          ,EMRATS= 0.0          ,EMRATP= 0.11999995    ,PRCRTM=  2700000.0    ,SHIFTS=
 ,STKHTN=  29.869995    ,STKDIA=  7.3761597    ,EXVELN=  15.240000    ,TEXN=  811.19995    ,RATCAP= 0.0          ,
        ,CONEFP= 0.97999978    ,ACFMN=  1360000.0    ,TAC= 0.0             ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
907,ISIC=      2911,ISIT=       61,IPRC=        1,IDDEV=       10,PRTYPE=-0.12427946E 28,POLJUR=        2,
        ,DEVEFP= 0.92499816    ,EMRATS= 0.0          ,EMRATP= 0.11999995    ,PRCRTM=  2700000.0    ,SHIFTS=
 ,STKHTN=  29.869995    ,STKDIA=  7.3761559    ,EXVELN=  15.240000    ,TEXN=  532.00000    ,RATCAP= 0.0          ,
        ,CONEFP= 0.97999978    ,ACFMN=  913468.00    ,TAC=  651755.31      ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          1,PLUME= 0.0          ,IUSE=          1
907,ISIC=      2951,ISIT=      150,IPRC=        1,IDDEV=        0,PRTYPE=-0.12427946E 28,POLJUR=        1,
        ,DEVEFP= 0.0          ,EMRATS= 0.0          ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 ,STKHTN=  17.982986    ,STKDIA= 0.94487995    ,EXVELN=  17.678391    ,TEXN=  394.19995    ,RATCAP= 0.0          ,
        ,CONEFP= 0.0           ,ACFMN=  26900.000    ,TAC= 0.0             ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
907,ISIC=      2951,ISIT=      150,IPRC=        1,IDDEV=        1,PRTYPE=-0.12427946E 28,POLJUR=        1,
        ,DEVEFP= 0.97999966    ,EMRATS= 0.0          ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 ,STKHTN=  17.982986    ,STKDIA= 0.82938170    ,EXVELN=  17.678391    ,TEXN=  303.71924    ,RATCAP= 0.0          ,
        ,CONEFP= 0.0           ,ACFMN=  20725.641    ,TAC=  7869.8477      ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
907,ISIC=      2951,ISIT=      150,IPRC=        1,IDDEV=        2,PRTYPE=-0.12427946E 28,POLJUR=        1,
        ,DEVEFP= 0.89999968    ,EMRATS= 0.0          ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 ,STKHTN=  17.982986    ,STKDIA= 0.82938170    ,EXVELN=  17.678391    ,TEXN=  303.71924    ,RATCAP= 0.0          ,
        ,CONEFP= 0.0           ,ACFMN=  20725.641    ,TAC=  5779.6055      ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
907,ISIC=      2951,ISIT=      150,IPRC=        1,IDDEV=        3,PRTYPE=-0.12427946E 28,POLJUR=        1,
        ,DEVEFP= 0.79999965    ,EMRATS= 0.0          ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 ,STKHTN=  17.982986    ,STKDIA= 0.82938170    ,EXVELN=  17.678391    ,TEXN=  303.71924    ,RATCAP= 0.0          ,
        ,CONEFP= 0.0           ,ACFMN=  20725.641    ,TAC=  4254.4609      ,HEC= 0.0             ,HER= 0.0          ,
    ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
 ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       2951,ISIT=        150,IPRC=          1,IDDEV=          7,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.84999967    ,EMRATS= 0.0            ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 0.50000000    ,STKHTN=  17.982986    ,STKDIA= 0.94487983    ,EXVELN=  17.678391    ,TEXN=  394.19995    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.0           ,ACFMN=  26899.996    ,TAC=  3744.7808    ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2951,ISIT=        150,IPRC=          1,IDDEV=          8,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.74999964    ,EMRATS= 0.0            ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 0.50000000    ,STKHTN=  17.982986    ,STKDIA= 0.94487983    ,EXVELN=  17.678391    ,TEXN=  394.19995    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.0           ,ACFMN=  26899.996    ,TAC=  3109.1792    ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2951,ISIT=        150,IPRC=          1,IDDEV=          9,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.59999967    ,EMRATS= 0.0            ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 0.50000000    ,STKHTN=  17.982986    ,STKDIA= 0.94487983    ,EXVELN=  17.678391    ,TEXN=  394.19995    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.0           ,ACFMN=  26899.996    ,TAC=  2259.7566    ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       2951,ISIT=        150,IPRC=          1,IDDEV=         16,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.98999965    ,EMRATS= 0.0            ,EMRATP= 0.96999997    ,PRCRTM=  55000.000    ,SHIFTS=
 0.50000000    ,STKHTN=  17.982986    ,STKDIA= 0.94487983    ,EXVELN=  17.678391    ,TEXN=  394.19995    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.0           ,ACFMN=  26899.996    ,TAC=  8932.5938    ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3241,ISIT=        100,IPRC=          1,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.0           ,EMRATS= 0.0            ,EMRATP=  2.7900000    ,PRCRTM=  859000.00    ,SHIFTS=
  3.0000000    ,STKHTN=  60.959991    ,STKDIA=  3.4442396    ,EXVELN=  15.240000    ,TEXN=  561.00000    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.97999578    ,ACFMN=  298000.00    ,TAC= 0.0             ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3241,ISIT=        100,IPRC=          1,IDDEV=         10,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.92499816    ,EMRATS= 0.0            ,EMRATP=  2.7900000    ,PRCRTM=  859000.00    ,SHIFTS=
  3.0000000    ,STKHTN=  60.959991    ,STKDIA=  3.4442396    ,EXVELN=  15.240000    ,TEXN=  532.00000    ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.97999578    ,ACFMN=  286368.19    ,TAC=  235491.56    ,HEC= 0.0            ,HER= 0.0            ,
HED= 0.0            ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          1,PLUME= 0.0           ,IUSE=          1
&END
```


Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       3241,ISIT=        100,IPRC=          1,IDDEV=         16,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.98999965     ,EMRATS= 0.0              ,EMRATP=  2.7900000     ,PRCRTM=  859000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  60.959991     ,STKDIA=  3.4442396     ,EXVELN=  15.240000     ,TEXN=  532.00000     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.97999978     ,ACFMN=  286368.19      ,TAC=  249044.25      ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          1,PLUME= 0.0              ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS= 0.0              ,EMRATP=  19.179993     ,PRCRTM=  477000.00     ,SHIFTS=
  1.0000000     ,STKHTN=  11.886999     ,STKDIA=  2.1335993     ,EXVELN=  17.678391     ,TEXN=  294.11987     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  187500.00      ,TAC= 0.0               ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0              ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          1,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.97999966     ,EMRATS= 0.0              ,EMRATP=  19.179993     ,PRCRTM=  477000.00     ,SHIFTS=
  1.0000000     ,STKHTN=  11.886999     ,STKDIA=  2.1332054     ,EXVELN=  17.678391     ,TEXN=  294.01147     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  187430.81      ,TAC=  69629.938      ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0              ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          2,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.89999968     ,EMRATS= 0.0              ,EMRATP=  19.179993     ,PRCRTM=  477000.00     ,SHIFTS=
  1.0000000     ,STKHTN=  11.886999     ,STKDIA=  2.1332054     ,EXVELN=  17.678391     ,TEXN=  294.01147     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  187430.81      ,TAC=  39488.766      ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0              ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          3,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.79999965     ,EMRATS= 0.0              ,EMRATP=  19.179993     ,PRCRTM=  477000.00     ,SHIFTS=
  1.0000000     ,STKHTN=  11.886999     ,STKDIA=  2.1332054     ,EXVELN=  17.678391     ,TEXN=  294.01147     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  187430.81      ,TAC=  30866.109      ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0              ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          7,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.84999967     ,EMRATS= 0.0              ,EMRATP=  19.179993     ,PRCRTM=  477000.00     ,SHIFTS=
  1.0000000     ,STKHTN=  11.886999     ,STKDIA=  2.1335983     ,EXVELN=  17.678391     ,TEXN=  294.11987     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  187499.94      ,TAC=  26658.133      ,HEC= 0.0               ,HER= 0.0         ,
HED= 0.0                ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0              ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          8,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.74999964    ,EMRATS= 0.0          ,EMRATP=  19.179993    ,PRCRTM=  477000.00    ,SHIFTS=
  1.0000000   ,STKHTN=  11.886999    ,STKDIA=  2.1335983    ,EXVELN=  17.678391    ,TEXN=  294.11987    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  187499.94    ,TAC=  22220.973    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=          9,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.59999967    ,EMRATS= 0.0          ,EMRATP=  19.179993    ,PRCRTM=  477000.00    ,SHIFTS=
  1.0000000   ,STKHTN=  11.886999    ,STKDIA=  2.1335983    ,EXVELN=  17.678391    ,TEXN=  294.11987    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  187499.94    ,TAC=  16580.113    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3295,ISIT=         51,IPRC=          1,IDDEV=         18,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.98999965    ,EMRATS= 0.0          ,EMRATP=  19.179993    ,PRCRTM=  477000.00    ,SHIFTS=
  1.0000000   ,STKHTN=  11.886999    ,STKDIA=  2.1335983    ,EXVELN=  17.678391    ,TEXN=  294.11987    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  187499.94    ,TAC=  41760.016    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3312,ISIT=        111,IPRC=          1,IDDEV=          C,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.0           ,EMRATS= 0.0          ,EMRATP=  1.0000000    ,PRCRTM=  288000.00    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA=  4.5415192    ,EXVELN=  17.678391    ,TEXN=  475.93188    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.99699974    ,ACFMN=  600000.00    ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3312,ISIT=        111,IPRC=          1,IDDEV=          1,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.79999769    ,EMRATS= 0.0          ,EMRATP=  1.0000000    ,PRCRTM=  288000.00    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA=  3.6750250    ,EXVELN=  17.678391    ,TEXN=  311.64722    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.99699974    ,ACFMN=  392888.81    ,TAC=  339278.38    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3312,ISIT=        111,IPRC=          1,IDDEV=         10,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.88999736    ,EMRATS= 0.0          ,EMRATP=  1.0000000    ,PRCRTM=  288000.00    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA=  4.5415173    ,EXVELN=  17.678391    ,TEXN=  475.93188    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.99699974    ,ACFMN=  599999.75    ,TAC=  216219.06    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       3312,ISIT=        111,IPRC=          2,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS= 0.0            ,EMRATP= 0.73999995     ,PRCRTM=  440000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  5.3339996     ,EXVELN=  17.678391     ,TEXN=  833.43994     ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.99299961     ,ACFMN=  835000.00      ,TAC= 0.0               ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.0        ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3312,ISIT=        111,IPRC=          2,IDDEV=          1,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.79999769     ,EMRATS= 0.0            ,EMRATP= 0.73999995     ,PRCRTM=  440000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  3.4384117     ,EXVELN=  17.678391     ,TEXN=  346.32544     ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.99299961     ,ACFMN=  346973.63      ,TAC=  330982.94        ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.0        ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3312,ISIT=        111,IPRC=          3,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS= 0.22999996     ,EMRATP= 0.26999998     ,PRCRTM=  125000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  3.5966396     ,EXVELN=  17.678391     ,TEXN=  444.23999     ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.82899976     ,ACFMN=  388000.00      ,TAC= 0.0               ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.0        ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3312,ISIT=        111,IPRC=          3,IDDEV=          7,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.42999923     ,EMRATS= 0.22999996     ,EMRATP= 0.26999998     ,PRCRTM=  125000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  3.5966387     ,EXVELN=  17.678391     ,TEXN=  444.23999     ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.82899976     ,ACFMN=  387999.94      ,TAC=  87839.188        ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.0        ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3312,ISIT=        111,IPRC=          3,IDDEV=         10,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.97999954     ,EMRATS= 0.22999996     ,EMRATP= 0.26999998     ,PRCRTM=  125000.00     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA=  3.5966387     ,EXVELN=  17.678391     ,TEXN=  444.23999     ,RATCAP= 0.0            ,
CONEFS= 0.0             ,CONEFP= 0.82899976     ,ACFMN=  387999.94      ,TAC=  171174.25        ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.0        ,HEG= 0.0               ,AMC= 0.0               ,AMR= 0.0               ,AMD= 0.0               ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=          0,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640797     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  119000.00      ,TAC= 0.0               ,HEC= 0.0               ,HER= 0.0               ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0               ,AMR= 0.0               ,AMD=  15900.000        ,AMG= 0.0               ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=          0,PLUME= 0.0            ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=         10,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.75000000     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  74818.688     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD=  15900.000     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=         16,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.75000000     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  73547.000     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD=  15900.000     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=         29,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.99948817    ,DEVEFP= 0.82506347     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC= -86011.875     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD= 0.0           ,AMG=  2317909.0     ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=         31,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.11762679    ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  29017.750     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD=  15900.004     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.56603956    ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         30,IDDEV=         32,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.49578667    ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  145087.69     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD=  15900.004     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.33962369    ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=         40,IDDEV=          0,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0           ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640797     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  119000.00     ,TAC= 0.0            ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0            ,AMC= 0.0            ,AMR= 0.0            ,AMD=  15900.000     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=          40,IDDEV=          10,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.75000000     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0          ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  74818.688     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0          ,AMC= 0.0           ,AMR= 0.0           ,AMD=  15900.000     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=          40,IDDEV=          16,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.75000000     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0          ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  73547.000     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0          ,AMC= 0.0           ,AMR= 0.0           ,AMD=  15900.000     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=          40,IDDEV=          29,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.99948817    ,DEVEFP= 0.82506347     ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0          ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC= -86011.875     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0          ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG=  2317909.0     ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=          40,IDDEV=          31,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.11762679    ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0          ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  29017.750     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0          ,AMC= 0.0           ,AMR= 0.0           ,AMD=  15900.004     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.56603956    ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         71,IPRC=          40,IDDEV=          32,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.49578667    ,DEVEFP= 0.0            ,EMRATS= 0.79999995     ,EMRATP= 0.99999964E-01,PRCRTM= 0.0          ,SHIFTS=
  3.0000000     ,STKHTN=  30.783997     ,STKDIA=  2.1640787     ,EXVELN=  15.240000     ,TEXN=  505.95581     ,RATCAP= 0.22699999E 10,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  118999.94     ,TAC=  145087.69     ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.80668643E 12,HEG= 0.0          ,AMC= 0.0           ,AMR= 0.0           ,AMD=  15900.004     ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.33962369    ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=           0,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.0            ,EMRATS= 0.91999996     ,EMRATP=  1.0099993     ,PRCRTM=  1100.0000     ,SHIFTS=
  3.0000000     ,STKHTN=  29.869995     ,STKDIA= 0.45719999     ,EXVELN=  17.678391     ,TEXN=  449.79980     ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0            ,ACFMN=  6200.0000     ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          1,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.97999966    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.37901354    ,EXVELN=  17.678391    ,TEXN=  309.11255    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  4260.7773    ,TAC=  17613.516    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          2,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.89999968    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.37901354    ,EXVELN=  17.678391    ,TEXN=  309.11255    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  4260.7773    ,TAC=  12431.012    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          3,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.79999965    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.37901354    ,EXVELN=  17.678391    ,TEXN=  309.11255    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  4260.7773    ,TAC=  11502.996    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          7,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.84999967    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.45719981    ,EXVELN=  17.678391    ,TEXN=  449.79980    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  6199.9961    ,TAC=  8438.2148    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          8,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.74999964    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.45719981    ,EXVELN=  17.678391    ,TEXN=  449.79980    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  6199.9961    ,TAC=  7953.5313    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=          9,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.59999967    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000    ,STKHTN=  29.869995    ,STKDIA= 0.45719981    ,EXVELN=  17.678391    ,TEXN=  449.79980    ,RATCAP= 0.0           ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  6199.9961    ,TAC=  7339.0508    ,HEC= 0.0           ,HER= 0.0           ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=         0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       3323,ISIT=         72,IPRC=          1,IDDEV=         16,PRTYPE=-0.12427946E 28,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.98999965    ,EMRATS= 0.91999996    ,EMRATP=  1.0099993    ,PRCRTM=  1100.0000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA= 0.45719981    ,EXVELN=  17.678391    ,TEXN=  449.79980    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  6199.9961    ,TAC=  15954.453    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3332,ISIT=        270,IPRC=          1,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.0           ,EMRATS=  203.00000    ,EMRATP= 0.30999994    ,PRCRTM=  96000.000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA=  3.2308798    ,EXVELN=  17.678391    ,TEXN=  783.39990    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.98999977    ,ACFMN=  302000.00    ,TAC= 0.0          ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3332,ISIT=        270,IPRC=          1,IDDEV=         13,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.79999983   ,DEVEFP= 0.19999999    ,EMRATS=  203.00000    ,EMRATP= 0.30999994    ,PRCRTM=  96000.000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA=  2.1330757    ,EXVELN=  17.678391    ,TEXN=  341.47168    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.98999977    ,ACFMN=  131637.00    ,TAC=  665977.50    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3332,ISIT=        270,IPRC=          3,IDDEV=          0,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.0           ,EMRATS=  28.199997    ,EMRATP= 0.20000000E-01,PRCRTM=  44200.000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA= 0.73152000    ,EXVELN=  17.678391    ,TEXN=  783.39990    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.98999977    ,ACFMN=  16000.000    ,TAC= 0.0          ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3332,ISIT=        270,IPRC=          3,IDDEV=         10,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.92499816    ,EMRATS=  28.199997    ,EMRATP= 0.20000000E-01,PRCRTM=  44200.000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA= 0.73151982    ,EXVELN=  17.678391    ,TEXN=  532.00000    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.98999977    ,ACFMN=  11114.992    ,TAC=  32248.848    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          1,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       3332,ISIT=        270,IPRC=          3,IDDEV=         13,PRTYPE=-0.12427946E 28,POLJUR=          1,
DEVEFS= 0.79999983   ,DEVEFP= 0.19999999    ,EMRATS=  28.199997    ,EMRATP= 0.20000000E-01,PRCRTM=  44200.000    ,SHIFTS=
  3.0000000   ,STKHTN=  29.869995    ,STKDIA= 0.48296052    ,EXVELN=  17.678391    ,TEXN=  341.47168    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.98999977    ,ACFMN=  6974.1445    ,TAC=  96120.188    ,HEC= 0.0          ,HER= 0.0          ,
HED= 0.0        ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000   ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=          0,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055998     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1128000.0     ,TAC= 0.0               ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC=  3370.0000     ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=         10,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.88999736     ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055960     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1127999.0     ,TAC=  411263.25     ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC=  3370.0000     ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=         11,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.44999707     ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055960     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1127999.0     ,TAC=  345401.63     ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC=  3370.0000     ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=         16,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.0             ,DEVEFP= 0.98999965     ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055960     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1127999.0     ,TAC=  524259.75     ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC=  3370.0000     ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=         27,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.36111248      ,DEVEFP=-0.36662865     ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055960     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1127999.0     ,TAC=  4632438.0     ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC= 0.0             ,AMR=  515863.19     ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          5,IPRC=          10,IDDEV=         28,PRTYPE= -64.250977     ,POLJUR=          1,
DEVEFS= 0.56374907      ,DEVEFP=-0.21422768     ,EMRATS=  192.07999     ,EMRATP=  1.7999992     ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA=  6.7055960     ,EXVELN=  15.240000     ,TEXN=  439.23584     ,RATCAP= 0.48099983E 10,
CONEFS= 0.0             ,CONEFP= 0.99199975     ,ACFMN=  1127999.0     ,TAC=  13819351.     ,HEC= 0.28291117E 14,HER= 0.0            ,
HED= 0.0          ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD=  564109.38     ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         29,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.99991143    ,DEVEFP= 0.59156090    ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  7671891.0    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG=  82236112.    ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         30,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.32439405    ,DEVEFP= -105.47791    ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  751692.00    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  2870.7385    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS=  128.05988    ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         31,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.61813587    ,DEVEFP= -105.47791    ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  1170820.0    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  2870.7385    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS=  64.029938    ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         32,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.80856144    ,DEVEFP= -98.134598    ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  2269224.0    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  2672.7563    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS=  32.014969    ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         39,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.89999980    ,DEVEFP= 0.0           ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  600133.69    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  3370.0000    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         41,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.49999988    ,DEVEFP= 0.0           ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0             ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  1124366.0    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  3370.0000    ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.0000000    ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          5,IPRC=         10,IDDEV=         42,PRTYPE= -64.250977    ,POLJUR=          1,
DEVEFS= 0.79999983    ,DEVEFP= 0.97999966    ,EMRATS=  192.07999    ,EMRATP=  1.7999992    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA=  6.7055960    ,EXVELN=  15.240000    ,TEXN=  439.23584    ,RATCAP= 0.48099983E 10,
CONEFS= 0.0           ,CONEFP= 0.99199975    ,ACFMN=  1127999.0    ,TAC=  1278564.0    ,HEC= 0.28291117E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  3370.0000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=          0,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.0           ,EMRATS=  3.5899992    ,EMRATP=  4.1999998    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.91439998    ,EXVELN=  15.240000    ,TEXN=  444.79590    ,RATCAP= 0.48099994E 09,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  21100.000    ,TAC= 0.0           ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  63.000000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=          7,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.84999967    ,EMRATS=  3.5899992    ,EMRATP=  4.1999998    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.91439986    ,EXVELN=  15.240000    ,TEXN=  444.79590    ,RATCAP= 0.48099994E 09,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  21099.996    ,TAC=  11912.508    ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  63.000000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=          8,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.74999964    ,EMRATS=  3.5899992    ,EMRATP=  4.1999998    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.91439986    ,EXVELN=  15.240000    ,TEXN=  444.79590    ,RATCAP= 0.48099994E 09,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  21099.996    ,TAC=  10723.434    ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  63.000000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=          9,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.59999967    ,EMRATS=  3.5899992    ,EMRATP=  4.1999998    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.91439986    ,EXVELN=  15.240000    ,TEXN=  444.79590    ,RATCAP= 0.48099994E 09,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  21099.996    ,TAC=  9285.3398    ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  63.000000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         10,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.98999965    ,EMRATS=  3.5899992    ,EMRATP=  4.1999998    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.91439986    ,EXVELN=  15.240000    ,TEXN=  444.79590    ,RATCAP= 0.48099994E 09,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  21099.996    ,TAC=  29413.918    ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC=  63.000000    ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.2500000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

NOT REPRODUCIBLE

```
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.2500000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.2500000
&END
&STRATM
IREGR=
DEVEFS= 0.0
  3.0000000
CONEFS= 0.0
HED= 0.0
  1.2500000
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         27,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.36111218     ,DEVEFP= 0.98970926     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0             ,CONEFP= 0.0              ,ACFMN=  21099.996     ,TAC=  86600.625     ,HEC= 0.52888496E 12,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR=  9643.7422     ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.2500000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         28,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.56374884     ,DEVEFP= 0.99085677     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0             ,CONEFP= 0.0              ,ACFMN=  21099.996     ,TAC=  258344.56     ,HEC= 0.52888496E 12,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD=  10545.676     ,AMG= 0.0          ,OUSE=
  1.2500000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=          907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         29,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.99991143     ,DEVEFP= 0.99692410     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0              ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0             ,CONEFP= 0.0              ,ACFMN=  21099.996     ,TAC=  143421.38     ,HEC= 0.52888496E 12,HER= 0.0             ,
HED= 0.0          ,HEG= 0.0          ,AMC= 0.0          ,AMR= 0.0          ,AMD= 0.0          ,AMG=  1537353.0     ,OUSE=
  1.2500000     ,AEMIS= 0.0          ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         30,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.32439381     ,DEVEFP= 0.14814806     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  21099.996     ,TAC=  14052.500     ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  53.666672     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.2500000     ,AEMIS=  2.3939981     ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         31,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.61813575     ,DEVEFP= 0.14814806     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  21099.996     ,TAC=  21887.813     ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  53.666672     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.2500000     ,AEMIS=  1.1969986     ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          6,IPRC=         20,IDDEV=         32,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.80856138     ,DEVEFP= 0.20689660     ,EMRATS=  3.5899992     ,EMRATP=  4.1999998     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.91439986     ,EXVELN=  15.240000     ,TEXN=  444.79590     ,RATCAP= 0.48099994E 09,
CONEFS= 0.0            ,CONEFP= 0.0            ,ACFMN=  21099.996     ,TAC=  42421.813     ,HEC= 0.52888496E 12,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0          ,AMC=  49.965515     ,AMR= 0.0          ,AMD= 0.0          ,AMG= 0.0          ,OUSE=
  1.2500000     ,AEMIS= 0.59849960     ,IGAS=          0,PLUME= 0.0          ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=          0,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0            ,DEVEFP= 0.0            ,EMRATS=  377.19995     ,EMRATP=  8.0999994     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.0            ,EXVELN=  15.240000     ,TEXN=  427.55981     ,RATCAP= 0.80749978E 10,
CONEFS= 0.0            ,CONEFP= 0.97499979     ,ACFMN=  2640000.0     ,TAC= 0.0            ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000     ,AMR= 0.0          ,AMD= 0.0          ,AMG=  6340000.0     ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=          0,PLUME=  32.514999     ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         10,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0            ,DEVEFP= 0.92499816     ,EMRATS=  377.19995     ,EMRATP=  8.0999994     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.0            ,EXVELN=  15.240000     ,TEXN=  427.55981     ,RATCAP= 0.80749978E 10,
CONEFS= 0.0            ,CONEFP= 0.97499979     ,ACFMN=  2639999.0     ,TAC=  738847.06     ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000     ,AMR= 0.0          ,AMD= 0.0          ,AMG=  6340000.0     ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=          0,PLUME=  32.514999     ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         11,PRTYPE= -64.250977     ,POLJUR=          2,
DEVEFS= 0.0            ,DEVEFP= 0.62499797     ,EMRATS=  377.19995     ,EMRATP=  8.0999994     ,PRCRTM= 0.0            ,SHIFTS=
  3.0000000     ,STKHTN=  121.00499     ,STKDIA= 0.0            ,EXVELN=  15.240000     ,TEXN=  427.55981     ,RATCAP= 0.80749978E 10,
CONEFS= 0.0            ,CONEFP= 0.97499979     ,ACFMN=  2639999.0     ,TAC=  588098.56     ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000     ,AMR= 0.0          ,AMD= 0.0          ,AMG=  6340000.0     ,OUSE=
  1.0000000     ,AEMIS= 0.0            ,IGAS=          0,PLUME=  32.514999     ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         16,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.0           ,DEVEFP= 0.98999965    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  1051796.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6340000.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         27,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.36111134    ,DEVEFP= 0.45554155    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  9094436.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC= 0.0           ,AMR=  1012745.8    ,AMD= 0.0           ,AMG=  6339999.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         28,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.56374693    ,DEVEFP= 0.51555657    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  27130256.    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC= 0.0           ,AMR= 0.0           ,AMD=  1107463.0    ,AMG=  6339999.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         29,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.99990809    ,DEVEFP= 0.83287126    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  15061508.    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.16778651E 09,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         30,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.32439238    ,DEVEFP= -33.074677    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  1475736.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  5635.8516    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6339999.0    ,OUSE=
  1.0000000    ,AEMIS=  251.40781    ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         31,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.61813343    ,DEVEFP= -33.074677    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  2298569.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  5635.8516    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6339999.0    ,OUSE=
  1.0000000    ,AEMIS=  125.70390    ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         32,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.80855864    ,DEVEFP= -30.725143    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  4454964.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  5247.1719    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6339999.0    ,OUSE=
  1.0000000    ,AEMIS=  62.851944    ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         39,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.89999980    ,DEVEFP= 0.0           ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  2094821.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6340000.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         41,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.49999988    ,DEVEFP= 0.0           ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  1875702.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6340000.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4911,ISIT=          7,IPRC=         30,IDDEV=         42,PRTYPE= -64.250977    ,POLJUR=          2,
DEVEFS= 0.79999983    ,DEVEFP= 0.97999966    ,EMRATS=  377.19995    ,EMRATP=  8.0999994    ,PRCRTM= 0.0           ,SHIFTS=
  3.0000000    ,STKHTN=  121.00499    ,STKDIA= 0.0           ,EXVELN=  15.240000    ,TEXN=  427.55981    ,RATCAP= 0.80749978E 10,
CONEFS= 0.0           ,CONEFP= 0.97499979    ,ACFMN=  2639999.0    ,TAC=  2013268.0    ,HEC= 0.55541309E 14,HER= 0.0          ,
HED= 0.0          ,HEG= 0.23140982E 13,AMC=  6616.0000    ,AMR= 0.0           ,AMD= 0.0           ,AMG=  6340000.0    ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME=  32.514999    ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        130,IPRC=          1,IDDEV=          0,PRTYPE=-0.21863474E 41,POLJUR=          1,
DEVEFS= 0.0           ,DEVEFP= 0.0           ,EMRATS= 0.29999995    ,EMRATP=  2.5499992    ,PRCRTM=  25400.000    ,SHIFTS=
  3.0000000    ,STKHTN=  46.023987    ,STKDIA=  2.9260798    ,EXVELN=  15.240000    ,TEXN=  533.75586    ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  212000.00    ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        130,IPRC=          1,IDDEV=          1,PRTYPE=-0.21863474E 41,POLJUR=          1,
DEVEFS= 0.0           ,DEVEFP= 0.97999966    ,EMRATS= 0.29999995    ,EMRATP=  2.5499992    ,PRCRTM=  25400.000    ,SHIFTS=
  3.0000000    ,STKHTN=  46.023987    ,STKDIA=  2.2558994    ,EXVELN=  15.240000    ,TEXN=  317.25610    ,RATCAP= 0.0          ,
CONEFS= 0.0           ,CONEFP= 0.0           ,ACFMN=  126009.44    ,TAC=  130008.00    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000    ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        130,IPRC=          1,IDDEV=          2,PRTYPE=-0.21863474E 41,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.89999968    ,EMRATS= 0.29999995    ,EMRATP=  2.5499992    ,PRCRTM=  25400.000    ,SHIFTS=
  3.0000000   ,STKHTN=  46.023987    ,STKDIA=  2.2558994    ,EXVELN=  15.240000    ,TEXN=  317.25610    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  126009.44    ,TAC=  61212.992    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        130,IPRC=          1,IDDEV=          3,PRTYPE=-0.21863474E 41,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.79999965    ,EMRATS= 0.29999995    ,EMRATP=  2.5499992    ,PRCRTM=  25400.000    ,SHIFTS=
  3.0000000   ,STKHTN=  46.023987    ,STKDIA=  2.2558994    ,EXVELN=  15.240000    ,TEXN=  317.25610    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  126009.44    ,TAC=  50290.227    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        131,IPRC=          2,IDDEV=          0,PRTYPE=-0.21863474E 41,POLJUR=          1,
DEVEFS= 0.0          ,DEVEFP= 0.0           ,EMRATS= 0.21999997    ,EMRATP= 0.32999998    ,PRCRTM=  10300.000    ,SHIFTS=
  1.0000000   ,STKHTN=  14.934999    ,STKDIA= 0.0           ,EXVELN= 0.0           ,TEXN=  255.20000    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN= 0.0           ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        131,IPRC=          4,IDDEV=          0,PRTYPE=-0.21863474E 41,PCLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.0           ,EMRATS= 0.29999998E-02,EMRATP= 0.79999983E-01,PRCRTM=  29500.000    ,SHIFTS=
  1.0000000   ,STKHTN=  36.575989    ,STKDIA=  1.4935198    ,EXVELN=  6.0959997    ,TEXN=  533.19995    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  62400.000    ,TAC= 0.0           ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        131,IPRC=          4,IDDEV=          1,PRTYPE=-0.21863474E 41,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.97999966    ,EMRATS= 0.29999998E-02,EMRATP= 0.79999983E-01,PRCRTM=  29500.000    ,SHIFTS=
  1.0000000   ,STKHTN=  36.575989    ,STKDIA=  1.1519499    ,EXVELN=  6.0959997    ,TEXN=  317.20215    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  37121.922    ,TAC=  18835.484    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
&STRATM
IREGR=        907,ISIC=       4953,ISIT=        131,IPRC=          4,IDDEV=          2,PRTYPE=-0.21863474E 41,POLJUR=          2,
DEVEFS= 0.0          ,DEVEFP= 0.89999968    ,EMRATS= 0.29999998E-02,EMRATP= 0.79999983E-01,PRCRTM=  29500.000    ,SHIFTS=
  1.0000000   ,STKHTN=  36.575989    ,STKDIA=  1.1519499    ,EXVELN=  6.0959997    ,TEXN=  317.20215    ,RATCAP= 0.0          ,
CONEFS= 0.0          ,CONEFP= 0.0           ,ACFMN=  37121.922    ,TAC=  11654.754    ,HEC= 0.0           ,HER= 0.0          ,
HED= 0.0          ,HEG= 0.0           ,AMC= 0.0           ,AMR= 0.0           ,AMD= 0.0           ,AMG= 0.0           ,OUSE=
  1.0000000   ,AEMIS= 0.0           ,IGAS=          0,PLUME= 0.0           ,IUSE=          1
&END
```

Figure 2-10. (Continued)

```
&STRATM
IREGR=          907,ISIC=        4953,ISIT=         131,IPRC=           4,IDDEV=           3,PRTYPE=-0.21863474E 41,POLJUR=           2,
DEVEFS= 0.0             ,DEVEFP= 0.79999965     ,EMRATS= 0.29999998E-02,EMRATP= 0.79999983E-01,PRCRTM=  29500.000     ,SHIFTS=
  1.0000000     ,STKHTN=  36.575989     ,STKDIA=  1.1519499     ,EXVELN=  6.0959797     ,TEXN=  317.20215     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  37121.922     ,TAC=  8811.8984     ,HEC= 0.0             ,HER= 0.0             ,
MED= 0.0          ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=           0,PLUME= 0.0            ,IUSE=           1
&END
&STRATM
IREGR=          907,ISIC=        4953,ISIT=         131,IPRC=           4,IDDEV=          10,PRTYPE=-0.21863474E 41,POLJUR=           2,
DEVEFS= 0.0             ,DEVEFP= 0.98999965     ,EMRATS= 0.29999998E-02,EMRATP= 0.79999983E-01,PRCRTM=  29500.000     ,SHIFTS=
  1.0000000     ,STKHTN=  36.575989     ,STKDIA=  1.4935188     ,EXVELN=  6.0959997     ,TEXN=  532.00000     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN=  63015.891     ,TAC=  53160.832     ,HEC= 0.0             ,HER= 0.0             ,
MED= 0.0          ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=           1,PLUME= 0.0            ,IUSE=           1
&END
&STRATM
IREGR=          907,ISIC=        4953,ISIT=         132,IPRC=           2,IDDEV=           0,PRTYPE=-0.21863474E 41,PCLJUR=           2,
DEVEFS= 0.0             ,DEVEFP= 0.0            ,EMRATS= 0.14999998     ,EMRATP= 0.21999997     ,PRCRTM=  6900.0000     ,SHIFTS=
  1.0000000     ,STKHTN=  14.934999     ,STKDIA= 0.0            ,EXVELN= 0.0            ,TEXN=  255.20000     ,RATCAP= 0.0              ,
CONEFS= 0.0             ,CONEFP= 0.0            ,ACFMN= 0.0             ,TAC= 0.0             ,HEC= 0.0             ,HER= 0.0             ,
MED= 0.0          ,HEG= 0.0             ,AMC= 0.0             ,AMR= 0.0             ,AMD= 0.0             ,AMG= 0.0             ,OUSE=
  1.0000000     ,AEMIS= 0.0             ,IGAS=           0,PLUME= 0.0            ,IUSE=           1
&END
```


Figure 2-10. (Continued)

Table 2-4

Central City Strategy Definition

Strategy I - Particulate

- Maximum Technology (EST02), with no open burning, applied to all source categories in both States.
- Scale Factors: State A - .67, State B - .75.
- Statistical output desired-receptor numbers, averaging times and percentile values same as APCP Run 2 of 2 (note: receptor numbers change after file merge operation).

Strategy II - Particulate

- Standards Applied:

	Fuel Combustion	Industrial Process	Solid Waste
State A	Heat Input(EST08) with data: 1.,.5, 10.,.5,10000., .1,100000.,.1	Potential Emission (EST05)	Potential Emission (EST05)
State B	Heat Input(EST08)	Potential Emission (EST05)	Potential Emission (EST05)

- Scale Factors: State A = .79, State B = .84
  907999901000 = .46
  907999902300 = .63
  907999902400 = .63

- Projection Factors:

  Point Sources-907291903302 = 1.5
  907281903402 = 0.0
  907281903420 = 0.0
  907333227001 = 1.25
  907333227003 = 1.25
  907491100510 = 2.0
  907491100730 = 1.33
  907495313001 = 1.65
  907495313104 = 0.0

  Area Sources - State A = 1.12, State B = 1.30
  907999900300 = 1.34
  907999900700 = 1.46
  907999902800 = 1.24

Table 2-4 (Continued)

Strategy III - SO_2

- Null standard (EST01) for all source categories in both States.

Strategy IV - SO_2

- Standards Applied:

	Fuel Combustion	Industrial Process	Solid Waste
State A	Sulfur Limit (EST23)	Exhaust Concentration Limit (EST13) of 1000 ppm	Exhaust Concentration Limit (EST13)
State B	Sulfur Limit (EST24)	Process Weight (EST18)	Process Weight (EST18)

- Scale Factors: State A = .70, State B = .67

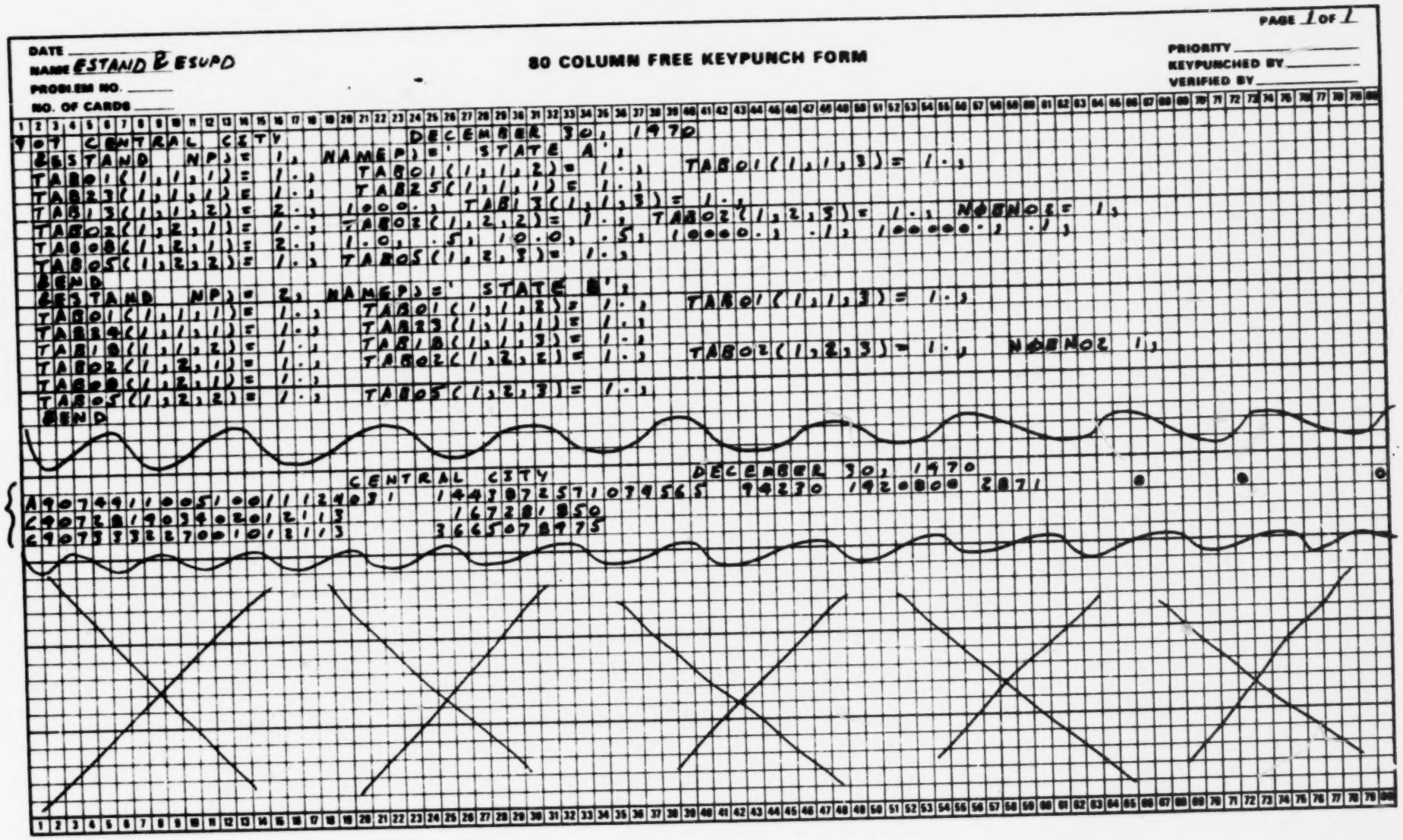

Figure 2-11. Emission Standards Program and Emission Standards Update Program Inputs.

CONTROL STRATEGY EMISSION STANDARDS RUN DECEMBER 30, 1970

CONTROL COST-EFFECTIVENESS FILE DATE DECEMBER 28, 1970

EMISSION STANDARD INPUT

REGION 907 CENTRAL CITY

POLITICAL JURISDICTION 1 STATE A

```
TAB01(1,1,1)= 1.
TAB01(1,1,2)= 1.
TAB01(1,1,3)= 1.
TAB02(1,2,1)= 1.,
TAB02(1,2,2)= 1.,
TAB02(1,2,3)= 1.,
NOBNO2= 1,
TAB05(1,2,2)= 1.,        20.   4.000,      1000.  60.000,      6000.  60.000,      30000. 300.000,1000000000. 300.000,
TAB05(1,2,3)= 1.,        20.   4.000,      1000.  60.000,      6000.  60.000,      30000. 300.000,1000000000. 300.000,
NOBNO5= 0,
TAB08(1,2,1)= 2.,      1.000,      0.500,      10.000,      0.500,   10000.000,      0.100,  100000.000,      0.100,
TAB13(1,1,2)= 2.,1000.00,
TAB13(1,1,3)= 1.,  500.00,
TAB23(1,1,1)= 1.,
TAB25(1,1,1)= 1.,
```

Figure 2-12. Emission Standards Program Output.

NOT REPRODUCIBLE

```
POLITICAL JURISDICTION  2     STATE B

TAB01(1,1,1)= 1.

TAB01(1,1,2)= 1.

TAB01(1,1,3)= 1.

TAB02(1,2,1)= 1.,

TAB02(1,2,2)= 1.,

TAB02(1,2,3)= 1.,
NOBNO2= 1,

TAB05(1,2,2)= 1.,        20.   4.000,      1000.  60.000,      6000.  60.000,     30000. 300.000,1000000000. 300.000,

TAB05(1,2,3)= 1.,        20.   4.000,      1000.  60.000,      6000.  60.000,     30000. 300.000,1000000000. 300.000,
NOBNO5= 0,

TAB08(1,2,1)= 1.,       0.001,       0.600,      10.000,       0.600,   10000.000,       0.200,  100000.000,       0.200,

TAB13(1,1,2)= 1.,     736.00,      10.00,    1000.00,      12.20,    2000.00,      19.50,   10000.00,      57.40,   20000.00,
                       91.20,  100000.00,     268.00,  200000.00,     428.00, 1000000.00,    1250.00, 2000000.00,    2010.00,
                  10000000.00,    5850.00,20000000.00,    9000.00,

TAB18(1,1,3)= 1.,     736.00,      10.00,    1000.00,      12.20,    2000.00,      19.50,   10000.00,      57.40,   20000.00,
                       91.20,  100000.00,     268.00,  200000.00,     428.00, 1000000.00,    1250.00, 2000000.00,    2010.00,
                  10000000.00,    5850.00,20000000.00,    9000.00,

TAB23(1,1,1)= 1.,

TAB24(1,1,1)= 1.,
```

Figure 2-12. (Continued)

NOT REPRODUCIBLE

EMISSION STANDARDS

REGION 907

CENTRAL CITY

RUN DATE DECEMBER 30, 1970

SOURCE		EMISSION STANDARD			EMISSION (TONS/DAY)		REQUIRED	ID	DEVICE COST	DEVICE EFFICIENCY		FUEL QUANTITY COAL	RES. OIL	DIS. OIL	GAS	COOLED GAS	ERROR
		PI	POL	CAT	ALLOWED	EXISTING	EFF.			SO2	PART	TONS/DAY	GAL/DAY	GAL/DAY	CU FT/DAY	FLAG	FLAG
2819	3420	1	1	1	20.36	20.36	0.0	0	0.	0.0	0.0	351.	2553.	0.	8000.	0	0
2819	3420	23	1	1	13.64	20.36	33.0	30	25000.	34.3	-355.6	299.	2553.	0.	8000.	0	0
2819	3420	25	1	1	3.44	20.36	83.1	32	200904.	81.2	-324.3	276.	2553.	0.	8000.	0	0
2819	3420	2	2	1	0.04	3.90	99.8	16	63815.	0.0	99.0	351.	2553.	0.	8000.	0	0
2819	3420	8	2	1	0.92	3.90	95.6	12	55381.	0.0	80.0	351.	2553.	0.	8000.	0	0
4911	5101	1	1	1	192.08	192.08	0.0	0	0.	0.0	0.0	3370.	0.	0.	0.	0	0
4911	5101	23	1	1	128.06	192.08	33.3	30	751692.	32.4	******	2871.	0.	0.	0.	0	0
4911	5101	25	1	1	32.01	192.08	83.3	32	2269224.	80.9	******	2673.	0.	0.	0.	0	0
4911	5101	2	2	1	0.02	1.80	100.0	16	524260.	0.0	99.0	3370.	0.	0.	0.	0	0
4911	5101	8	2	1	4.60	1.80	98.0	0	0.	0.0	0.0	3370.	0.	0.	0.	0	0
2119	1251	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2119	1251	2	2	2	0.00	0.10	98.0	1	15441.	0.0	98.0	0.	0.	0.	0.	0	0
2119	1251	5	2	2	0.10	0.10	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2819	3402	1	1	2	23.70	23.70	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2819	3402	13	1	2	8.36	23.70	64.7	13	117771.	80.0	80.0	0.	0.	0.	0.	0	0
2819	3402	2	2	2	0.00	0.21	99.0	14	73630.	0.0	99.0	0.	0.	0.	0.	0	0
2819	3402	5	2	2	0.21	0.21	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2819160003		1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2819160003		2	2	2	0.22	21.90	99.0	14	52496.	0.0	99.0	0.	0.	0.	0.	0	0
2819160003		5	2	2	0.72	21.90	96.7	14	52496.	0.0	99.0	0.	0.	0.	0.	0	0
2951150011		1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2951150011		2	2	2	0.01	0.97	99.0	16	8933.	0.0	99.0	0.	0.	0.	0.	0	0
2951150011		5	2	2	0.07	0.97	92.5	1	7870.	0.0	98.0	0.	0.	0.	0.	0	0
3241100011		1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3241100011		2	2	2	0.03	2.79	100.0	16	249044.	0.0	99.0	0.	0.	0.	0.	0	0
3241100011		5	2	2	1.39	2.79	99.0	10	235492.	0.0	92.5	0.	0.	0.	0.	0	0
3295	5101	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3295	5101	2	2	2	0.19	19.18	99.0	18	41760.	0.0	99.0	0.	0.	0.	0.	0	0
3295	5101	5	2	2	0.24	19.18	98.7	18	41760.	0.0	99.0	0.	0.	0.	0.	0	0
3332270011		1	1	2	203.00	203.00	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3332270011		13	1	2	13.52	203.00	93.3	13	665978.	80.0	20.0	0.	0.	0.	0.	0	0
3332270011		2	2	2	0.25	0.31	99.2	13	665978.	80.0	20.0	0.	0.	0.	0.	0	0
3332270011		5	2	2	0.72	0.31	97.7	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3332270031		1	1	2	28.20	28.20	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3332270031		13	1	2	0.72	28.20	97.5	13	96120.	80.0	20.0	0.	0.	0.	0.	0	0
3332270031		2	2	2	0.00	0.02	99.9	10	32249.	0.0	92.5	0.	0.	0.	0.	0	0
3332270031		5	2	2	0.21	0.02	99.6	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953130011		1	1	3	0.30	0.30	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953130011		13	1	3	6.97	0.30	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953130011		2	2	3	0.05	2.55	98.0	1	130008.	0.0	98.0	0.	0.	0.	0.	0	0
4953130011		5	2	3	0.25	2.55	90.3	1	130008.	0.0	98.0	0.	0.	0.	0.	0	0
4953131021		1	1	3	0.22	0.22	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953131021		13	1	3	0.0	0.22	100.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953131021		2	2	3	0.0	0.33	100.0	0	0.	100.0	100.0	0.	0.	0.	0.	0	0
4953131021		5	2	3	0.04	0.33	87.1	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2000	4110	1	1	1	25.00	25.00	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2000	4110	23	1	1	14.63	25.00	41.5	30	187366.	20.5	-492.6	385.	0.	0.	0.	0	0
2000	4110	24	1	1	7.31	25.00	70.7	31	333095.	55.1	-492.6	399.	0.	0.	0.	0	0
2000	4110	2	2	1	0.04	4.00	99.8	16	100377.	0.0	99.0	385.	0.	0.	0.	0	0
2000	4110	8	2	1	1.20	4.00	92.6	12	69214.	0.0	80.0	385.	0.	0.	0.	0	0

Figure 2-12. (Continued)

NOT REPRODUCIBLE

EMISSION STANDARDS

REGION 907 CENTRAL CITY RUN DATE DECEMBER 30, 1970

SOURCE	EMISSION STANDARD PI	NUM	PO	CAT	EMISSION (TONS/DAY) ALLOWED	EXISTING	REQUIRED EFF.	ID	DEVICE COST	EFFICIENCY SO2	EFFICIENCY PART	FUEL QUANTITY COAL TONS/DAY	RES. OIL GAL/DAY	DIS. OIL GAL/DAY	GAS MCU FT/DAY	COOLED GAS FLAG	ERROR FLAG
3323 7130	2	1	1	1	0.80	0.80	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
3323 7130	2	23	1	1	0.0	0.80	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
3323 7130	2	24	1	1	0.57	0.80	29.2	31	29018.	11.8	0.0	0.	0.	15900.	0.	0	0
3323 7130	2	2	2	1	0.02	0.10	82.5	29	-86012.	99.9	82.5	0.	0.	0.	2317909.	0	0
3323 7130	2	8	2	1	0.28	0.10	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
3323 7140	2	1	1	1	0.80	0.80	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
3323 7140	2	23	1	1	0.0	0.80	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
3323 7140	2	24	1	1	0.57	0.80	29.2	31	29019.	11.8	0.0	0.	0.	15900.	0.	0	0
3323 7140	2	2	2	1	0.02	0.10	82.5	29	-86012.	99.9	82.5	0.	0.	0.	2317909.	0	0
3323 7140	2	8	2	1	0.28	0.10	0.0	0	0.	0.0	0.0	0.	0.	15900.	0.	0	0
4911 620	2	1	1	1	3.59	3.59	0.0	0	0.	0.0	0.0	63.	0.	0.	0.	0	0
4911 620	2	23	1	1	2.39	3.59	46.7	30	14053.	32.4	14.8	54.	0.	0.	0.	0	0
4911 620	2	24	1	1	1.20	3.59	73.3	31	21888.	61.8	14.8	54.	0.	0.	0.	0	0
4911 620	2	2	2	1	0.01	4.20	99.8	29	143421.	100.0	99.7	0.	0.	0.	1537353.	0	0
4911 620	2	8	2	1	0.23	4.20	95.5	16	22336.	0.0	99.0	63.	0.	0.	0.	0	0
4911 730	2	1	1	1	377.20	377.20	0.0	0	0.	0.0	0.0	6616.	0.	0.	6340000.	0	0
4911 730	2	23	1	1	251.41	377.20	33.3	30	1475736.	32.4	******	5636.	0.	0.	6339999.	0	0
4911 730	2	24	1	1	125.70	377.20	66.7	31	2298569.	61.8	******	5636.	0.	0.	6339999.	0	0
4911 730	2	2	2	1	0.08	8.10	100.0	16	1051796.	0.0	99.0	6616.	0.	0.	6340000.	0	0
4911 730	2	8	2	1	16.40	8.10	94.9	0	0.	0.0	0.0	6616.	0.	0.	6340000.	0	0
2819 3302	2	1	1	2	19.10	19.10	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2819 3302	2	18	1	2	3.05	19.10	84.0	13	104278.	80.0	20.0	0.	0.	0.	0.	0	2
2819 3302	2	2	2	2	0.00	0.26	99.9	14	73630.	0.0	99.0	0.	0.	0.	0.	0	0
2819 3302	2	5	2	2	0.34	0.26	91.7	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2871260	2	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2871260	2	2	2	2	0.08	8.00	99.8	18	59416.	0.0	99.0	0.	0.	0.	0.	0	0
2871260	2	5	2	2	0.58	8.00	98.8	18	59416.	0.0	99.0	0.	0.	0.	0.	0	0
2911 6101	2	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
2911 6101	2	2	2	2	0.01	0.12	99.9	10	651755.	0.0	92.5	0.	0.	0.	0.	1	0
2911 6101	2	5	2	2	0.43	0.12	93.4	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111	2	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111	2	2	2	2	0.11	1.00	100.0	10	216219.	0.0	89.0	0.	0.	0.	0.	0	0
3312111	2	5	2	2	3.33	1.00	99.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111102	2	1	1	2	0.0	0.0	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111102	2	2	2	2	0.15	0.74	99.9	1	330983.	0.0	80.0	0.	0.	0.	0.	0	0
3312111102	2	5	2	2	1.06	0.74	99.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111103	2	1	1	2	0.23	0.23	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111103	2	18	1	2	3.74	0.23	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3312111103	2	2	2	2	0.01	0.27	99.7	10	171174.	0.0	98.0	0.	0.	0.	0.	0	0
3312111103	2	5	2	2	0.18	0.27	88.8	7	87839.	0.0	43.0	0.	0.	0.	0.	0	0
3323 7201	2	1	1	2	0.92	0.92	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3323 7201	2	18	1	2	0.16	0.92	83.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
3323 7201	2	2	2	2	0.01	1.01	99.0	16	15954.	0.0	99.0	0.	0.	0.	0.	2	0
3323 7201	2	5	2	2	0.13	1.01	87.1	2	12431.	0.0	90.0	0.	0.	0.	0.	0	0
4953131	2	1	1	3	0.00	0.00	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953131	2	18	1	3	0.47	0.00	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953131	2	2	2	3	0.00	0.08	99.0	10	53161.	0.0	99.0	0.	0.	0.	0.	1	0
4953131	2	5	2	3	0.00	0.08	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953131	2	1	1	3	0.15	0.15	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0
4953132	2	18	1	3	0.19	0.15	0.0	0	0.	0.0	0.0	0.	0.	0.	0.	0	0

Figure 2-12. (Continued)

EMISSION STANDARDS

REGION 907 CENTRAL CITY RUN DATE DECEMBER 30, 1970

SOURCE	EMISSION STANDARD				EMISSION (TONS/DAY)		REQUIRED	ID	DEVICE COST	DEVICE EFFICIENCY		FUEL QUANTITY COAL	RES. OIL	DIS. OIL	GAS	COOLED GAS	ERROR
	PO	NUM	PO	CAT	ALLOWED	EXISTING	EFF.			SO2	PART	TONS/DAY	GAL/DAY	GAL/DAY	CU FT/DAY	FLAG	FLAG
495313202	2	2	2	3	C.0	C.22	100.0	0	0.	100.0	100.0	0.	0.	0.	0.	0	0
495313202	2	5	2	3	0.03	0.22	85.4	0	0.	0.0	0.0	0.	0.	0.	0.	0	2

ERROR MESSAGES FOR CONTROL STRATEGY REGULATIONS

REGION 907 DATE OF RUN DECEMBER 30, 1970

**ESTC5B- SOURCE 2119 125 PE VALUE OF 8.33 LESS THAN MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.

**ESTC5B- SOURCE 2819 3402 PE VALUE OF 17.50 LESS THAN MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.

**ESTC5B- SOURCE 495313104 PE VALUE OF 20.00 LESS THAN MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.

Figure 2-12. (Continued)

= 3.4%, required efficiency - 56.5%, allowable emissions = 94.23 tons/day, existing emissions = 192.08 tons/day, and coal used = 2871 tons/day.

Figures 2-11 and 2-13 give the completed data forms and program output respectively. The user should note that the format for the device efficiency output is +XX.X. Since ESUPD [redacted] is a CØBØL program, the output is determined on a character by character basis, resulting in a truncation of minus signs and numbers outside the XX.X range (-355.6 output as 55.6 for source 281903420, standard 23; 100.0 output as 0.0 for source 495313102, standard 02; etc.). This output quirk has no influence on the strategy summary results.

2.9 Regional Strategies (RSTRAT) Program Test

Figure 2-14 gives the completed data form (constructed from data in Table 2-4) and Figure 2-5 gives the program output.

EMISSION STANDARDS UPDATED FILE

REGION 907 CENTRAL CITY RUN DATE DECEMBER 31,1970

SOURCE	EMISSION STANDARD			EMISSION (TONS/DAY)		REQUIRED	ID	DEVICE COST	EFFICIENCY		FUEL QUANTITY				COOLED	
	PI	POL	CAT	ALLOWED	EXISTING	EFF.			SO2	PART	COAL TONS/DAY	RES. OIL GAL/DAY	DIS. OIL GAL/DAY	GAS CU FT/DAY	GAS FLAG	EFFORT FLAG
2819034201	01	01	1	1	20.36	20.36	0.0	0	0	0.0	0.0	351.0	2553.0	0.0	8000.0	0	0
2819034201	01	23	1	1	13.64	20.36	33.0	30	25000	34.3	55.6	299.0	2553.0	0.0	8000.0	0	0
2819034201	01	25	1	1	3.44	20.36	83.1	32	200904	81.2	24.3	278.4	2553.0	0.0	8000.0	0	0
2819034201	01	02	2	1	0.04	3.90	99.8	16	63815	0.0	99.0	351.0	2553.0	0.0	8000.0	0	0
2819034201	01	08	2	1	0.92	3.90	95.6	12	55391	0.0	80.0	351.0	2553.0	0.0	8000.0	0	0
2819034201	01	01	1	1	192.08	192.08	0.0	0	0	0.0	0.0	3370.0	0.0	0.0	0.0	0	0
4911005101	01	01	1	1	128.06	192.08	33.3	30	751692	32.4	47.8	2870.7	0.0	0.0	0.0	0	0
4911005101	01	23	1	1	94.23	192.08	50.5	31	1443872	57.1	3.4	2871.0	0.0	0.0	0.0	0	0
4911005101	01	24	1	1	32.01	192.08	83.3	32	2269224	80.9	13.5	2672.8	0.0	0.0	0.0	0	0
4911005101	01	25	1	1	0.02	1.80	100.0	16	524250	0.0	99.0	3370.0	0.0	0.0	0.0	0	0
4911005101	01	02	2	1	4.60	1.80	58.0	0	0	0.0	0.0	3370.0	0.0	0.0	0.0	0	0
4911005101	01	08	2	1	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2211900125	01	01	1	2	0.00	0.10	98.0	1	15441	0.0	98.0	0.0	0.0	0.0	0.0	0	0
2211900125	01	02	2	2	0.10	0.10	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2211900125	01	05	2	2	23.70	23.70	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2819034021	01	01	1	2	3.36	23.70	64.7	13	167281	85.0	80.0	0.0	0.0	0.0	0.0	0	0
2819034021	01	13	1	2	0.00	0.21	99.0	14	73630	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2819034021	01	02	2	2	0.21	0.21	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2819034021	01	05	2	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2819160031	01	01	1	2	0.22	21.90	99.0	14	52496	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2819160031	01	02	2	2	0.72	21.90	96.7	14	52496	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2819160031	01	05	2	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2951150011	01	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2951150011	01	02	2	2	0.01	0.97	99.0	16	8933	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2951150011	01	05	2	2	0.07	0.97	92.5	11	7870	0.0	98.0	0.0	0.0	0.0	0.0	0	0
3241100011	01	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3241100011	01	02	2	2	0.03	2.79	100.0	16	249044	0.0	99.0	0.0	0.0	0.0	0.0	1	0
3241100011	01	05	2	2	1.39	2.79	99.0	10	235492	0.0	92.5	0.0	0.0	0.0	0.0	1	0
3295051011	01	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3295051011	01	02	2	2	0.19	19.18	99.0	18	41760	0.0	99.0	0.0	0.0	0.0	0.0	0	0
3295051011	01	05	2	2	0.24	19.18	98.7	18	41760	0.0	99.0	0.0	0.0	0.0	0.0	0	0
3332270011	01	01	1	2	203.00	203.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3332270011	01	13	1	2	13.52	203.00	93.3	13	3655078	97.5	20.0	0.0	0.0	0.0	0.0	0	0
3332270011	01	02	2	2	0.25	0.31	99.2	13	665977	80.0	20.0	0.0	0.0	0.0	0.0	0	0
3332270011	01	05	2	2	0.72	0.31	57.7	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3332270031	01	01	1	2	28.20	28.20	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
3332270031	01	13	1	2	0.72	28.20	97.5	13	96120	80.0	20.0	0.0	0.0	0.0	0.0	1	0
3332270031	01	02	2	2	0.00	0.02	99.9	10	32249	0.0	92.5	0.0	0.0	0.0	0.0	0	0
3332270031	01	05	2	2	0.21	0.02	89.6	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
4953130011	01	01	1	3	0.30	0.30	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
4953130011	01	13	1	3	6.97	0.30	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
4953130011	01	02	2	3	0.05	2.55	98.0	1	130008	0.0	98.0	0.0	0.0	0.0	0.0	0	0
4953130011	01	05	2	3	0.25	2.55	90.3	1	130008	0.0	98.0	0.0	0.0	0.0	0.0	0	0
4953131021	01	01	1	3	0.22	0.22	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
4953131021	01	13	1	3	0.00	0.22	100.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
4953131021	01	02	2	3	0.00	0.33	100.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
4953131021	01	05	2	3	0.04	0.33	87.1	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
2890041101	02	01	1	1	25.00	25.00	0.0	0	0	0.0	0.0	385.0	0.0	0.0	0.0	0	0
2890041101	02	23	1	1	14.63	25.00	41.5	30	187366	20.5	92.6	399.3	0.0	0.0	0.0	0	0
2890041101	02	24	1	1	7.31	25.00	70.7	31	333095	55.1	92.6	399.3	0.0	0.0	0.0	0	0

Figure 2-13. Emission Standards Update Program Output.

SOURCE	EMISSION STANDARD PT	INVN	POL	CAT	EMISSION (TONS/DAY) ALLOWED	EXISTING	REQUIRED EFF.	ID	DEVICE COST	EFFICIENCY SO2	PARTIC	FUEL QUANTITY COAL TONS/DAY	RES. OIL GAL/DAY	DIS. OIL GAL/DAY	GAS CU FT/DAY	COOLED GAS FLAG	EPROM FLAG
2400041100	02	02	2	1	0.04	4.00	99.9	16	100377	0.0	99.0	385.0	0.0	0.0	0.0	0	0
2400041100	02	08	2	1	1.70	4.00	92.6	12	68014	0.0	80.0	385.0	0.0	0.0	0.0	0	0
3323071300	02	01	1	1	0.80	0.80	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
3323071300	02	23	1	1	0.00	0.80	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
3323071300	02	24	1	1	0.57	0.80	29.2	31	29018	11.8	0.0	0.0	0.0	15900.0	0.0	0	0
3323071300	02	02	2	1	0.02	0.10	82.5	29	-86012	99.9	82.5	0.0	0.0	0.0	2317909.0	0	0
3323071300	02	08	2	1	0.28	0.10	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
3323071400	02	01	1	1	0.80	0.80	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
3323071400	02	23	1	1	0.00	0.80	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
3323071400	02	24	1	1	0.57	0.80	29.2	31	29018	11.8	0.0	0.0	0.0	15900.0	0.0	0	0
3323071400	02	02	2	1	0.02	0.10	82.5	29	-86012	99.9	82.5	0.0	0.0	0.0	2317909.0	0	0
3323071400	02	08	2	1	0.28	0.10	0.0	0	0	0.0	0.0	0.0	0.0	15900.0	0.0	0	0
4911006200	02	01	1	1	3.59	3.59	0.0	0	0	0.0	0.0	63.0	0.0	0.0	0.0	0	0
4911006200	02	23	1	1	2.39	3.59	46.7	30	14052	32.4	14.8	53.7	0.0	0.0	0.0	0	0
4911006200	02	24	1	1	1.20	3.59	73.3	31	21888	61.8	14.8	53.7	0.0	0.0	0.0	0	0
4911006200	02	02	2	1	0.01	4.20	99.8	29	173421	0.0	99.7	0.0	0.0	0.0	1537359.0	0	0
4911006200	02	08	2	1	0.23	4.20	95.5	16	22336	0.0	99.0	63.0	0.0	0.0	0.0	0	0
4911007300	02	01	1	1	377.20	377.20	0.0	0	0	0.0	0.0	6616.0	0.0	0.0	6340000.0	0	0
4911007300	02	23	1	1	251.41	377.20	33.3	30	1475736	32.4	7.5	5635.9	0.0	0.0	6339999.0	0	0
4911007300	02	24	1	1	125.70	377.20	66.7	31	2298569	61.8	7.5	5635.9	0.0	0.0	6339999.0	0	0
4911007300	02	02	2	1	0.03	8.10	100.0	16	1051796	0.0	99.0	6616.0	0.0	0.0	6340000.0	0	0
4911007300	02	08	2	1	16.40	8.10	94.9	0	0	0.0	0.0	6616.0	0.0	0.0	6340000.0	0	0
2819033020	02	01	1	2	19.10	19.10	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2819033020	02	18	1	2	3.05	19.10	84.0	13	104278	80.0	20.0	0.0	0.0	0.0	0.0	0	2
2819033020	02	02	2	2	0.00	0.26	99.9	14	73630	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2819033020	02	05	2	2	0.34	0.26	91.7	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2871260010	02	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2871260010	02	02	2	2	0.08	8.00	99.8	18	59416	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2871260010	02	05	2	2	0.58	8.00	98.8	18	59416	0.0	99.0	0.0	0.0	0.0	0.0	0	0
2911061010	02	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
2911061010	02	02	2	2	0.01	0.12	99.9	10	651755	0.0	92.5	0.0	0.0	0.0	0.0	1	0
2911061010	02	05	2	2	0.43	0.12	93.4	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111010	02	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111010	02	02	2	2	0.11	1.00	100.0	10	216219	0.0	89.0	0.0	0.0	0.0	0.0	0	0
3312111010	02	05	2	2	3.33	1.00	99.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111020	02	01	1	2	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111020	02	02	2	2	0.15	0.74	99.9	1	330983	0.0	80.0	0.0	0.0	0.0	0.0	0	0
3312111020	02	05	2	2	1.06	0.74	99.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111030	02	01	1	2	0.23	0.23	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111030	02	18	1	2	3.74	0.23	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3312111030	02	02	2	2	0.01	0.27	99.7	10	171174	0.0	98.0	0.0	0.0	0.0	0.0	0	0
3312111030	02	05	2	2	0.18	0.27	88.8	7	87839	0.0	43.0	0.0	0.0	0.0	0.0	0	0
3323072010	02	01	1	2	0.92	0.92	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
3323072010	02	18	1	2	0.16	0.92	83.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2
3323072010	02	02	2	2	0.01	1.01	99.0	16	15954	0.0	99.0	0.0	0.0	0.0	0.0	0	0
3323072010	02	05	2	2	0.13	1.01	87.1	2	12431	0.0	90.0	0.0	0.0	0.0	0.0	0	0
4953131040	02	01	1	3	0.00	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
4953131040	02	18	1	3	0.47	0.00	0.0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
4953131040	02	02	2	3	0.00	0.08	99.0	10	53161	0.0	99.0	0.0	0.0	0.0	0.0	1	0

Figure 2-13. (Continued)

SOURCE	EMISSION STANDARD POL	NUM	CAT	EMISSION (TONS/DAY) ALLOWED	EXISTING	REQUIRED EFF.	ID	DEVICE COST	EFFICIENCY SO2	PART	FUEL QUANTITY COAL TONS/DAY	RES. OIL GAL/DAY	DIS. OIL GAL/DAY	GAS CU FT/DAY	COOLED GAS FLAG	ERROR FLAG
495313104	02	05	2	3	0.08	0.08	0.0	01	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
495313202	02	01	1	3	0.15	0.15	0.0	01	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
495313202	02	18	1	3	0.16	0.15	0.0	01	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
495313202	02	02	2	3	0.00	0.22	100.0	01	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0
495313202	02	05	2	3	0.03	0.22	85.4	01	0	0.0	0.0	0.0	0.0	0.0	0.0	0	2

Figure 2-13. (Continued)

DATE ______ PAGE 1 OF 2

NAME RSTRAT; STRATEGIES I–IV

80 COLUMN FREE KEYPUNCH FORM

PROBLEM NO. ______ PRIORITY ______

NO. OF CARDS ______ KEYPUNCHED BY ______

VERIFIED BY ______

```
&RSTRT   NREGON= 907,
REGION='CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING',
DATE='DECEMBER 31, 1970',
IJUR= 2,
SO2CAL= 13.10, .6203, PARCAL= -2.59, 1.3315, AQSTAN= 35., 15., BACKGR=1., 2.,
IPUNCH= 1, NSELIZ= 1,
ISTATS= 91, 92, 93, 94, 95, 96, 97, 98, 99,
ISTATP= 91, 100, 101, 102, 103, 104, 105, 106,
SO2AVE= .5, 1.0, 3.0,
PARAVE= 1., 3.0, 20.0,
SO2PER= 1.0, 5.0, 10.0,
PARPER= .1, 1.0, 10.0,
SGDS= 1.96, 2.31, 2.04, 1.82, 2.15, 2.37, 2.40, 1.91, 1.77,
SGDP= 1.82, 2.01, 1.67, 1.94, 1.72, 1.87, 1.75, 1.99,
ASFAC= 1000., .67, .75,
&END
  2  1 02 02 02      STATE A
  2  2 02 02 02      STATE B
                                       END
&RSTRT   NREGON= 907,
REGION='CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS',
DATE='DECEMBER 31, 1970',
IJUR= 2,
SO2CAL= 13.1, .6203, PARCAL=-2.59, 1.3315, AQSTAN= 35., 15., BACKGR= 1., 2.,
IPUNCH= 1,
IFAC= 1, ASFAC= 1000., .79, .84,
IPROJ= 1, ASPRJ= 1000., 1.12, 1.70,
&END
  2  1 08 05 05      STATE A
  2  2 08 05 05      STATE B
                                       END
9079999010000        .46
9079999023000        .63
9079999042400        .63
                                       END
907281903302                   1.50
907281903402                    .00
907281903420                    .00
907333227001                   1.25
907333227003                   1.25
```

Figure 2-14. Regional Strategies Program Input.

DATE _____
NAME RSTRAT
PROBLEM NO. _____
NO. OF CARDS _____

80 COLUMN FREE KEYPUNCH FORM

PAGE 2 OF 2
PRIORITY _____
KEYPUNCHED BY _____
VERIFIED BY _____

```
907491100510                                  2.00
907491100730                                  1.33
907495[illegible]13001                          1.65
907495[illegible]13104                           .00
907999900300                                  1.34
907999900700                                  1.46
907999902800                                  1.24
                                                    END
&RSTRT  NREGON= 907,
REGION='CENTRAL CITY STRATEGY III SO2 - NULL STANDARD',
DATE='DECEMBER 31, 1970',
IJUR= 2,
SO2CAL= 13.1, .6203, PARCAL=-2.59, 1.3315, AQSTAN= 35., 15., BACKGR= 1., 2.,
IPUNCH= 1,
&END
  1   1 01 01 01        STATE A
  1   2 01 01 01        STATE B
                                                    END
&RSTRT  NREGON= 907,
REGION='CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS',
DATE='DECEMBER 31, 1970',
IJUR= 2,
SO2CAL= 13.1, .6203, PARCAL=-2.59, 1.3315, AQSTAN= 35., 15., BACKGR= 1., 2.,
IPUNCH= 1,
ASFAC= .70, .67,
&END
  1   1 23 13 13        STATE A
  1   2 24 18 18        STATE B
                                                    END
```

Figure 2-14. (Continued)

```
SOURCE CONTRIBUTION FILE DATE DECEMBER 28, 1970
EMISSION STANDARD FILE DATE DECEMBER 30, 1970
SOURCE FILE CREATE DATE DECEMBER 23, 1970  UPDATE DATE

&RSTRT
ADSTAN=  35.000000    ,  15.000000    ,ASFAC= 0.0           , 0.0           , 0.0           , 0.0           , 0.0           ,
 0.0           , 0.0           , 0.0           , 0.0           , 0.0           , 0.66999996    , 0.75000000    , 1.0000000     ,
 1.0000000     , 1.0000000     , 1.0000000     , 1.0000000     , 1.0000000     , 1.0000000     , 1.0000000     ,IPUNCH=          1,
ISTATS=          91,         100,         101,         102,         103,         104,         105,         106,           0,           0,
           0,           0,ISTATS=          91,          92,          93,          94,          95,          96,          97.          98,
          99,           0,           0,           0,NSEL12=           1,PARAVG=  1.0000000    ,  8.0000000    ,  24.000000    ,IFAC=
           0,PARCAL= -2.5899992    ,  1.3314991    ,PARPER= 0.99999964E-01,  1.0000000    ,  10.000000    ,REGION= 0.76473743    ,
-0.11855826E 43, 0.76479930    ,-0.37043515E 48,-0.96009541E 30,-0.24353499E 09, 0.84280163    ,-0.52719849E 42,-0.72015923E 47,
-0.30543306E 24, -3204.7031    ,-0.45022923E 46, 0.83530045    ,-0.26085329E 27, 0.76130444    ,-0.15250227E 26, 0.25000038    ,
 0.25098038    ,SGDP= 1.8199997    ,  2.0099993    ,  1.6699991    ,  1.9399996    ,  1.7199993    ,  1.8699999    ,
 1.7500000     ,  1.9899998    , 0.0           , 0.0           , 0.0           , 0.0           ,SGDS= 1.9599991    ,
 2.1099999     ,  2.0400000    ,  1.8199997    ,  2.1499996    ,  2.3299999    ,  2.3999996    ,  1.9099998    ,  1.7900000    ,
 0.0           , 0.0           , 0.0           ,SO2AVG= 0.50000000    ,  1.0000000    ,  3.0000000    ,SO2CAL=  13.099999    ,
 0.62029999    ,SO2PER=  1.0000000    ,  5.0000000    ,  10.000000    ,UTM= 0.0           , 0.0           ,IPROJ=          0,IJUD=
          2,NREGON=         907,DATE= -50627.770    ,-0.91978874E 24, 0.95290250    , 0.94522041    ,-0.15754294E 58,ASPEJ=
 1.0000000     ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
 1.0000000     ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
 1.0000000     ,  1.0000000    ,  1.0000000    ,  1.0000000    ,BACKGR=  1.0000000    ,  2.0000000
&END
```

Figure 2-15. Regional Strategies Program Output.

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING

INPUT CONTROL STRATEGY

POLLUTANT: PARTICULATES DECEMBER 31, 1970

POLITICAL JURISDICTION	EMISSION STANDARD		
	FUEL COMBUSTION	INDUSTRIAL PROCESS	SOLID WASTE
1 STATE A	2	2	2
2 STATE B	2	2	2

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 2 FOR PARTICULATE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2819	34	20	16	$ 63815.26	0.99000	0.99813	3.90	0.04	0.04
4911	5	10	16	$ 524259.75	0.99000	0.99992	1.80	0.02	0.02

(-) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

EMISSION STANDARD EFFECTS ION

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 2 FOR PARTICULATE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2119	1	25	1	$ 15441.41	0.98000	0.98000	0.10	0.00	0.00
2819	34	2	14	$ 73629.94	0.99000	0.99000	0.21	0.00	0.00
2819	160	3	14	$ 52496.38	0.99000	0.99000	21.90	0.22	0.22
2951	150	1	16	$ 8932.59	0.99000	0.99000	0.97	0.01	0.01
3241	100	1	G 16	$ 249044.25	0.99000	0.99580	2.79	0.03	0.03
3295	51	1	18	$ 41760.02	0.99000	0.99000	19.18	0.19	0.19
3332	270	1	13	$ 665977.50	0.20000	0.99200	0.31	0.25	0.25
3332	270	3	G 19	$ 32248.85	0.92500	0.99925	0.02	0.00	0.00

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 2 FOR PARTICULATE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	130	1	1	$ 130008.00	0.98000	0.98000	2.55	0.05	0.05
4953	131	2	** 0	$ 0.0	1.00000	1.00000	0.33	0.0	0.33

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE A JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 2	2	2	0.06	5.70	5.64	0.588	285.52
INDUSTRIAL PROCESS 2	8	8 G	0.70	45.48	44.78	1.140	69.72
SOLID WASTE DISPOSAL 2	2	1 **	0.05	2.88	2.50	0.130	142.53
JURISDICTION TOTAL	12	11	0.81	54.06	52.92	1.858	96.17

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)
POINT SOURCES.... 54.1
AREA SOURCES..... 16.1
TOTAL EMISSIONS.. 70.1
CONTROLLED REDUCTION.. 58.2

CONTROLLED EMISSIONS (TONS/DAY)
POINT SOURCES.... 1.1
AREA SOURCES..... 10.8
TOTAL EMISSIONS.. 11.9
PERCENTAGE REDUCTION... 83.0 %

JURISDICTION FUEL USE

COAL (TONS/DAY)..... 3721.000
RESID. OIL (GAL/DAY)..... 2553.000
DIST. OIL (GAL/DAY)..... 0.0
GAS (1000 CU. FT./DAY)... 8000.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 96.17 DOLLARS/TON

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 2 FOR PARTICULATE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2800	41	10	16	$ 100377.44	0.99000	0.99825	4.00	0.04	0.04
3323	71	30	29	$ -86011.88	0.82506	0.82506	0.10	0.02	0.02
3323	71	40	29	$ -86011.88	0.82506	0.82506	0.10	0.02	0.02
4911	6	20	29	$ 143421.38	0.99692	0.99754	4.20	0.01	0.01
4911	7	30	16	$ 1051796.00	0.99000	0.99975	8.10	0.08	0.08

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 2 FOR PARTICULATE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2819	33	2	14	$ 73629.94	0.99000	0.99937	0.26	0.00	0.00
2871	260	1	18	$ 59415.88	0.99000	0.99840	8.00	0.08	0.08
2911	61	1	G 10	$ 651755.31	0.92500	0.99864	0.12	0.01	0.01
3312	111	1	10	$ 216219.06	0.89000	0.99967	1.00	0.11	0.11
3312	111	2	1	$ 330982.94	0.80000	0.99860	0.74	0.15	0.15
3312	111	3	10	$ 171174.25	0.98000	0.99658	0.27	0.01	0.01
3323	12	1	16	$ 15954.45	0.99000	0.99000	1.01	0.01	0.01

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 2 FOR PARTICULATE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	131	4	G 10	$ 53160.83	0.99000	0.99000	0.08	0.00	0.00
4953	132	2	** 0	$ 0.0	1.00000	1.00000	0.22	0.0	0.22

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE B JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 2	5	5	0.17	16.50	16.33	1.124	188.49
INDUSTRIAL PROCESS 2	7	7 G	0.37	11.40	11.03	1.519	377.17
SOLID WASTE DISPOSAL 2	2	1 G **	0.00	0.30	0.08	0.053	1838.97
JURISDICTION TOTAL	14	13	0.53	28.20	27.45	2.696	269.12

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

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JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)		CONTROLLED EMISSIONS (TONS/DAY)	
POINT SOURCES....	28.2	POINT SOURCES....	0.8
AREA SOURCES.....	4.0	AREA SOURCES.....	3.0
TOTAL EMISSIONS..	32.2	TOTAL EMISSIONS..	3.8
CONTROLLED REDUCTION..	28.4	PERCENTAGE REDUCTION...	88.3 %

JURISDICTION FUEL USE

COAL (TONS/DAY).....	7001.000
RESID. OIL (GAL/DAY).....	0.0
DIST. OIL (GAL/DAY).....	0.0
GAS (1000 CU. FT./DAY)...	12513171.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 269.12 DOLLARS/TON

Figure 2-15. (Continued)

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
1	10.00	5.00	-0.221498E 00	0.139814E 01	0.0
2	10.00	20.00	-0.944405E-01	0.198518E 01	0.0
3	10.00	35.00	0.246636E 00	0.262649E 01	0.0
4	10.00	50.00	0.651246E 00	0.329166E 01	0.0
5	10.00	65.00	0.104690E 01	0.354822E 01	0.0
6	25.00	5.00	-0.228288E 00	0.160278E 01	0.0
7	25.00	20.00	-0.765314E-01	0.233441E 01	0.0
8	25.00	35.00	0.248140E 00	0.322258E 01	0.0
9	25.00	50.00	0.869423E 00	0.407466E 01	0.0
10	25.00	65.00	0.144232E 01	0.420602E 01	0.0
11	40.00	5.00	-0.198657E 00	0.181318E 01	0.0
12	40.00	20.00	-0.565767E-01	0.262661E 01	0.0
13	40.00	35.00	0.273214E 00	0.444573E 01	0.0
14	40.00	50.00	0.121019E 01	0.501091E 01	0.0
15	40.00	65.00	0.212911E 01	0.505285E 01	0.0
16	55.00	5.00	0.854740E-01	0.259009E 01	0.0
17	55.00	20.00	0.179905E 00	0.371643E 01	0.0
18	55.00	35.00	0.509943E 00	0.807127E 01	0.0
19	55.00	50.00	0.153063E 01	0.573223E 01	0.0
20	55.00	65.00	0.297390E 01	0.621108E 01	0.0
21	70.00	5.00	0.614234E 00	0.825891E 01	0.0
22	70.00	20.00	0.972165E 00	0.127114E 02	0.0
23	70.00	35.00	0.157738E 01	0.259208E 02	0.0
24	70.00	50.00	0.237510E 01	0.815439E 01	0.0
25	70.00	65.00	0.384276E 01	0.808217E 01	0.0
26	85.00	5.00	0.953145E 00	0.645629E 01	0.0
27	85.00	20.00	0.131212E 01	0.823769E 01	0.0
28	85.00	35.00	0.216711E 01	0.842065E 01	0.0
29	85.00	50.00	0.320716E 01	0.106142E 02	0.0
30	85.00	65.00	0.329609E 01	0.130876E 02	0.0
31	100.00	5.00	0.763492E 00	0.458745E 01	0.0
32	100.00	20.00	0.115444E 01	0.567658E 01	0.0
33	100.00	35.00	0.184290E 01	0.578022E 01	0.0
34	100.00	50.00	0.230448E 01	0.651518E 01	0.0
35	100.00	65.00	0.157810E 01	0.793172E 01	0.0
36	115.00	5.00	0.627299E 00	0.350499E 01	0.0
37	115.00	20.00	0.932359E 00	0.389304E 01	0.0
38	115.00	35.00	0.126618E 01	0.405867E 01	0.0
39	115.00	50.00	0.127385E 01	0.409656E 01	0.0
40	115.00	65.00	0.762190E 00	0.386058E 01	0.0
41	130.00	5.00	0.543657E 00	0.269630E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
42	130.00	20.00	0.716124E 00	0.308322E 01	0.0
43	130.00	35.00	0.785159E 00	0.308108E 01	0.0
44	130.00	50.00	0.621388E 00	0.307239E 01	0.0
45	130.00	65.00	0.315484E 00	0.307526E 01	0.0
46	145.00	5.00	0.427951E 00	0.240173E 01	0.0
47	145.00	20.00	0.484014E 00	0.240036E 01	0.0
48	145.00	35.00	0.466165E 00	0.236861E 01	0.0
49	145.00	50.00	0.263083E 00	0.227595E 01	0.0
50	145.00	65.00	0.669117E-01	0.206712E 01	0.0
51	55.00	15.00	0.141501E 00	0.310481E 01	0.0
52	75.00	30.00	0.170710E 01	0.264080E 02	0.0
53	77.50	57.50	0.369083E 01	0.151353E 02	0.0
54	75.00	60.00	0.366002E 01	0.108028E 02	0.0
55	82.50	60.00	0.314334E 01	0.109211E 02	0.0
56	90.00	60.00	0.299097E 01	0.149333E 02	0.0
57	95.00	57.50	0.257639E 01	0.911960E 01	0.0
58	65.00	70.00	0.329459E 01	0.750819E 01	0.0
59	75.00	75.00	0.253279E 01	0.100609E 02	0.0
60	95.00	82.50	0.824154E 00	0.759886E 01	0.0
61	10.00	80.00	0.952330E 00	0.346607E 01	0.0
62	10.00	95.00	0.659832E 00	0.316374E 01	0.0
63	10.00	110.00	0.305580E 00	0.283386E 01	0.0
64	25.00	80.00	0.124936E 01	0.401127E 01	0.0
65	25.00	95.00	0.710628E 00	0.369739E 01	0.0
66	25.00	110.00	0.306786E 00	0.319245E 01	0.0
67	40.00	80.00	0.167937E 01	0.494532E 01	0.0
68	40.00	95.00	0.778327E 00	0.448465E 01	0.0
69	40.00	110.00	0.257952E 00	0.368976E 01	0.0
70	55.00	80.00	0.204646E 01	0.589396E 01	0.0
71	55.00	95.00	0.807621E 00	0.588490E 01	0.0
72	55.00	110.00	0.250534E 00	0.414018E 01	0.0
73	70.00	80.00	0.199713E 01	0.803292E 01	0.0
74	70.00	95.00	0.908243E 00	0.104369E 02	0.0
75	70.00	110.00	0.323584E 00	0.428037E 01	0.0
76	85.00	80.00	0.181869E 01	0.172776E 02	0.0
77	85.00	95.00	0.865836E 00	0.119541E 02	0.0
78	85.00	110.00	0.392810E 00	0.385789E 01	0.0
79	100.00	90.00	0.665782E 00	0.523224E 01	0.0
80	100.00	95.00	0.426786E 00	0.349686E 01	0.0
81	100.00	110.00	0.257062E 00	0.218396E 01	0.0
82	115.00	80.00	0.192089E 00	0.311514E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
83	115.00	95.00	-0.635529E-02	0.217595E 01	0.0
84	115.00	110.00	-0.374632E-01	0.152276E 01	0.0
85	130.00	80.00	-0.755787E-02	0.474341E 01	0.0
86	130.00	95.00	-0.200768E 00	0.177444E 01	0.0
87	130.00	110.00	-0.223393E 00	0.107537E 01	0.0
88	145.00	80.00	-0.135077E 00	0.169930E 01	0.0
89	145.00	95.00	-0.238234E 00	0.107726E 01	0.0
90	145.00	110.00	-0.327482E 00	0.817194E 00	0.0
91	79.20	63.50	0.390923E 01	0.109710E 02	0.0
92	65.00	56.30	0.296586E 01	0.887774E 01	0.0
93	83.90	71.00	0.221815E 01	0.210578E 02	0.0
94	88.60	63.90	0.270372E 01	0.361689E 02	0.0
95	90.30	72.60	0.195871E 01	0.284339E 02	0.0
96	81.90	96.50	0.889512E 00	0.149386E 02	0.0
97	126.80	85.20	-0.555210E-01	0.420669E 01	0.0
98	75.00	17.10	0.108255E 01	0.113686E 02	0.0
99	82.10	54.90	0.347611E 01	0.170551E 02	0.0
100	60.00	71.10	0.289779E 01	0.665041E 01	0.0
101	88.50	74.60	0.224344E 01	0.279187E 02	0.0
102	91.50	90.00	0.883844E 00	0.925212E 01	0.0
103	90.00	65.30	0.301011E 01	0.246564E 02	0.0
104	75.20	53.50	0.340824E 01	0.885146E 01	0.0
105	70.50	23.00	0.112754E 01	0.175039E 02	0.0
106	71.20	9.50	0.750732E 00	0.100134E 02	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

STATISTICAL DATA FOR SELECTED RECEPTORS

ANNUAL PARTICULATES

MICROGRAMS PER CUBIC METER

AVERAGING TIME 1.0 HOURS

RECEPTOR NUMBER	ARITHMETIC MEAN	GEOMETRIC MEAN	EXPECTED STATISTICAL PARAMETERS: MAXIMUM CONCENTRATION	0.1 % CONCENTRATION	1.0 % CONCENTRATION	10.0 % CONCENTRATION	STANDARD GEOMETRIC DEVIATION
91	4.	3.	50.	29.	17.	8.	2.10
102	3.	2.	54.	29.	15.	6.	2.38
101	2.	2.	21.	13.	8.	4.	1.99
102	1.	1.	14.	8.	4.	2.	2.28
103	3.	2.	31.	19.	11.	6.	1.96
104	3.	3.	49.	28.	15.	7.	2.17
105	1.	1.	13.	8.	4.	2.	2.00
106	1.	1.	14.	7.	4.	2.	2.35

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

STATISTICAL DATA FOR SELECTED RECEPTORS

ANNUAL PARTICULATES

MICROGRAMS PER CUBIC METER

AVERAGING TIME 8.0 HOURS

RECEPTOR	EXPECTED STATISTICAL PARAMETERS						
NUMBER	ARITHMETIC MEAN	GEOMETRIC MEAN	MAXIMUM CONCENTRATION	0.1 % CONCENTRATION	1.0 % CONCENTRATION	10.0 % CONCENTRATION	STANDARD GEOMETRIC DEVIATION
91	4.	3.	27.	24.	14.	7.	1.92
100	3.	2.	26.	23.	13.	6.	2.14
101	2.	2.	12.	11.	7.	4.	1.75
102	1.	1.	7.	6.	4.	2.	2.04
103	3.	3.	17.	16.	10.	5.	1.81
104	3.	3.	25.	22.	13.	6.	1.99
105	1.	1.	7.	6.	4.	2.	1.84
106	1.	1.	7.	6.	3.	1.	2.12

Figure 2-15. (Continued)

. CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 1970

STATISTICAL DATA FOR SELECTED RECEPTORS

ANNUAL. PARTICULATES

MICROGRAMS PER CUBIC METER

AVERAGING TIME 24.0 HOURS

RECEPTOR NUMBER	EXPECTED STATISTICAL PARAMETERS						STANDARD GEOMETRIC DEVIATION
	ARITHMETIC MEAN	GEOMETRIC MEAN	MAXIMUM CONCENTRATION	0.1 % CONCENTRATION	1.0 % CONCENTRATION	10.0 % CONCENTRATION	
91	4.	3.	19.	21.	13.	7.	1.82
100	3.	2.	18.	20.	12.	6.	2.01
101	2.	2.	9.	10.	6.	4.	1.67
102	1.	1.	5.	6.	3.	2.	1.94
103	3.	3.	13.	14.	9.	5.	1.72
104	3.	3.	18.	19.	12.	6.	1.87
105	1.	1.	5.	5.	4.	2.	1.75
106	1.	1.	4.	5.	3.	1.	1.99

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING — DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

JURISDICTION AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
STATE A 1	12	11 G **	0.81	54.06	52.92	1.858	95.17
STATE B 2	14	13 G **	0.53	28.20	27.45	2.696	269.12
STRATEGY TOTAL	26	24	1.34	82.26	80.37	4.553	155.23

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY I PART-MAXIMUM TECH. WITH NO OPEN BURNING DECEMBER 31, 197[illegible]

C O N T R O L S T R A T E G Y S U M M A R Y

R E G I O N A L E M I S S I O N S

EXISTING EMISSIONS (TONS/DAY)		CONTROLLED EMISSIONS (TONS/DAY)	
POINT SOURCES....	82.3	POINT SOURCES....	1.9
AREA SOURCES.....	20.1	AREA SOURCES.....	13.8
TOTAL EMISSIONS..	102.3	TOTAL EMISSIONS..	15.7
CONTROLLED REDUCTION..	86.7	PERCENTAGE REDUCTION...	84.7 %

R E G I O N A L E N G L U S E

COAL (TONS/DAY).....	10722.000
RESID. OIL (GAL/DAY).....	2553.000
DIST. OIL (GAL/DAY).....	0.0
GAS (1000 CU. FT./DAY)...	1[illegible]1171.000

R E G I O N A L C O N T R O L C O S T - E F F E C T I V E N E S S

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 155.23 DOLLARS/TON

REDUCTION IN GROUND LEVEL CONCENTRATION . . . 629618. DOLLARS/MICROGRAM/CUBIC METER

Figure 2-15. (Continued)

NOT REPRODUCIBLE

```
$RSTRT
ASTAN=  35.000000    ,  15.000000    ,ASFAC= 0.0                  , 0.0                  , 0.0                  , 0.0                  , 0.0                  , 0.0                  ,
 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.78999996          , 0.83999997          , 1.0000000           ,
 1.0000000           , 1.0000000           , 1.0000000           , 1.0000000           , 1.0000000           , 1.0000000           ,IPUNCH=                1,
ISTATP=                0,                    0,                    0,                    0,                    0,                    0,                    0,
                       0,                    0,                    0,                    0,                    0,                    0,                    0,
                       0,ISTATS=             0,                    0,                    0,                    0,                    0,                    0,
                       0,                    0,                    0,NSEL12=             0.PARAVG= 0.0         , 0.0                 , 0.0                 ,IFAC=
                       0,                    0,                    0,                    , 0.0                 , 0.0                 ,REGION= -3165.3679   ,
                       1,PARCAL= -2.5899992  , 1.3314991           ,PARPER= 0.0          ,-0.36987537E 48, 0.84280163          ,-0.52694361E 42, -14.203317  ,
-0.95977588E 30, -3230.2441  , 0.88628918          , -14.235785          ,-0.10964703E 43, 0.77277809          ,-0.77172101E 41,-0.49026684E 25, -57920.250  ,
-0.16312496E 26, 0.31348938  ,-0.27536040E 27,-0.10964703E 43, 0.77277809          , 0.0                 , 0.0                 , 0.0                 ,
 0.25078033          ,SGDP= 0.0            , 0.0                 , 0.0                 , 0.0                 , 0.0                 ,SGDS= 0.0            ,
 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 ,
 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 ,SO2CAL=  13.099999   ,
 0.0                 , 0.0                 , 0.0                 ,SO2AVG= 0.0          , 0.0                 , 0.0                 ,IPROJ=                 1,IJUP=
 0.62029999          ,SO2PER= 0.0          , 0.0                 , 0.0                 ,UTM= 0.0             , 0.0                 ,-0.15754294E 58,ASPRJ=
                2,NREGON=          907,DATE= -50627.770  ,-0.91978874E 24, 0.95290250          , 0.94522041          , 0.0                 , 0.0                 ,
 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 , 0.0                 ,
 0.0                 , 0.0                 , 1.1199999           , 1.2999992           , 1.0000000           , 1.0000000           , 1.0000000           , 1.0000000           ,
 1.0000000           , 1.0000000           , 1.0000000           , 1.0000000           ,BACKGR=  1.0000000           , 2.0000000
&END
```

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS

INPUT CONTROL STRATEGY

POLLUTANT: PARTICULATES DECEMBER 31, 1970

	POLITICAL JURISDICTION	EMISSION STANDARD FUEL COMBUSTION	INDUSTRIAL PROCESS	SOLID WASTE
1	STATE A	8	5	5
2	STATE B	8	5	5

AREA SOURCE SCALE FACTORS

9999	1000	0.46
9999	2300	0.63
9999	2400	0.63
0	0	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 8 FOR PARTICULATE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2819	34	20	12	$ 5538C.56	0.80000	0.95589	3.90	0.92	0.78
4911	5	10	0	$ 0.0	0.0	0.97957	1.80	4.50	1.80

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS — DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 5 FOR PARTICULATE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2119	1	25	** 0	$ 0.0	0.0	0.0	0.10	0.10	0.10
2819	34	2	** 0	$ 0.0	0.0	0.0	0.21	0.21	0.21
2819	160	3	14	$ 52496.38	0.99000	0.96712	21.90	0.72	0.22
2951	150	1	1	$ 7869.35	0.98000	0.92503	0.97	0.07	0.02
3241	100	1	G 10	$ 235491.56	0.92500	0.99000	2.79	1.39	0.21
3295	51	1	18	$ 41760.02	0.99000	0.98749	19.18	0.24	0.19
3332	270	1	0	$ 0.0	0.0	0.97677	0.31	0.72	0.31
3332	270	3	0	$ 0.0	0.0	0.89585	0.02	0.21	0.02

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

NOT REPRODUCIBLE

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 5 FOR PARTICULATE CONTPOL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
4953	130	1	1	$ 130008.00	0.98000	0.90336	2.55	0.25	0.05
4953	131	2	** 0	$ 0.0	0.0	0.87069	0.33	0.04	0.33

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

J U R I S D I C T I O N S U M M A R Y

STATE A JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 8	2	1	5.52	5.70	3.12	0.055	48.63
INDUSTRIAL PROCESS 5	8	4 G **	3.67	45.48	44.20	0.338	20.93
SOLID WASTE DISPOSAL 5	2	1 **	0.29	2.88	2.50	0.130	142.53
JURISDICTION TOTAL	12	6	9.47	54.06	49.82	0.523	28.76

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

J U R I S D I C T I O N E M I S S I O N S

EXISTING EMISSIONS (TONS/DAY)
POINT SOURCES.... 54.1
AREA SOURCES..... 16.1
TOTAL EMISSIONS.. 70.1
CONTROLLED REDUCTION.. 54.0

CONTROLLED EMISSIONS (TONS/DAY)
POINT SOURCES.... 4.2
AREA SOURCES..... 11.9
TOTAL EMISSIONS.. 16.2
PERCENTAGE REDUCTION... 76.9 %

J U R I S D I C T I O N F U E L U S E

COAL (TONS/DAY)..... 3721.000
RESID. OIL (GAL/DAY)..... 2553.000
DIST. OIL (GAL/DAY)..... 0.0
GAS (1000 CU. FT./DAY)... 8000.000

J U R I S D I C T I O N C O N T R O L C O S T - E F F E C T I V E N E S S

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 28.76 DOLLARS/TON

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTS ON
SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 8 FOR PARTICULATE CONTROL
STATE 8 JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2800	41	10	12	$ 68013.56	0.80000	0.92556	4.00	1.70	0.80
3323	71	30	0	$ 0.0	0.0	0.0	0.10	0.28	0.10
3323	71	40	0	$ 0.0	0.0	0.0	0.10	0.28	0.10
4911	6	20	16	$ 22336.43	0.99000	0.95528	4.20	0.23	0.04
4911	7	30	0	$ 0.0	0.0	0.94938	8.10	16.40	8.10

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II FUEL-HEAT INPUT & POTENTIAL EMISSION DATA DECEMBER 31, 1970

EMISSION STANDARD EFFECTS ON

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 5 FOR PARTICULATE CONTROL
STATE 6 JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2819	33	2	0	$ 0.0	0.0	0.91667	0.26	0.34	0.26
2871	260	1	18	$ 59415.88	0.99000	0.98848	8.00	0.58	0.08
2911	61	1	0	$ 0.0	0.0	0.93444	0.12	0.43	0.12
3312	111	1	0	$ 0.0	0.0	0.99000	1.00	3.33	1.00
3312	111	2	0	$ 0.0	0.0	0.99000	0.74	1.05	0.74
3312	111	3	7	$ 87839.19	0.43000	0.88800	0.27	0.15	0.15
3322	72	1	2	$ 12431.01	0.90000	0.97148	1.01	0.14	0.10

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

NOT REPRODUCIBLE

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 5 FOR PARTICULATE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	131	4	** 0	$ 0.0	0.0	0.0	0.08	0.08	0.08
4953	132	2	** 0	$ 0.0	0.0	0.85351	0.22	0.03	0.22

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PER-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE B JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 8	5	2	18.89	16.50	7.36	0.090	33.64
INDUSTRIAL PROCESS 5	7	3	6.05	11.40	8.95	0.160	48.91
SOLID WASTE DISPOSAL 5	2	0 **	0.11	0.30	0.0	0.0	0.0
JURISDICTION TOTAL	14	5	25.06	28.20	16.30	0.250	42.02

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)

POINT SOURCES.... 28.2
AREA SOURCES..... 4.0
TOTAL EMISSIONS.. 32.2
CONTROLLED REDUCTION.. 17.2

CONTROLLED EMISSIONS (TONS/DAY)

POINT SOURCES.... 11.9
AREA SOURCES..... 3.1
TOTAL EMISSIONS.. 15.0
PERCENTAGE REDUCTION... 53.4 %

JURISDICTION FUEL USE

COAL (TONS/DAY)..... 7064.000
RESID. OIL (GAL/DAY)..... 0.0
DIST. OIL (GAL/DAY)..... 31800.000
GAS (1000 CU. FT./DAY)... 6340000.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 42.02 DOLLARS/TON

Figure 2-15. (Continued)

NOT REPRODUCIBLE

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
1	10.00	5.00	0.125374E 00	0.105128E 01	0.0
2	10.00	20.00	0.334186E 00	0.155656E 01	0.0
3	10.00	35.00	0.731446E 00	0.214168E 01	0.0
4	10.00	50.00	0.122080E 01	0.272209E 01	0.0
5	10.00	65.00	0.169260E 01	0.290211E 01	0.0
6	25.00	5.00	0.220774E 00	0.115574E 01	0.0
7	25.00	20.00	0.495935E 00	0.176195E 01	0.0
8	25.00	35.00	0.862806E 00	0.260791E 01	0.0
9	25.00	50.00	0.154327E 01	0.340080E 01	0.0
10	25.00	65.00	0.222746E 01	0.342088E 01	0.0
11	40.00	5.00	0.428656E 00	0.118590E 01	0.0
12	40.00	20.00	0.708076E 00	0.186196E 01	0.0
13	40.00	35.00	0.108535E 01	0.363359E 01	0.0
14	40.00	50.00	0.204596E 01	0.417513E 01	0.0
15	40.00	65.00	0.310914E 01	0.407292E 01	0.0
16	55.00	5.00	0.120043E 01	0.147513E 01	0.0
17	55.00	20.00	0.144053E 01	0.245579E 01	0.0
18	55.00	35.00	0.160335E 01	0.697785E 01	0.0
19	55.00	50.00	0.243763E 01	0.482522E 01	0.0
20	55.00	65.00	0.422429E 01	0.496069E 01	0.0
21	70.00	5.00	0.495741E 01	0.391572E 01	0.0
22	70.00	20.00	0.286615E 01	0.108174E 02	0.0
23	70.00	35.00	0.326311E 01	0.242251E 02	0.0
24	70.00	50.00	0.370544E 01	0.682004E 01	0.0
25	70.00	65.00	0.561026E 01	0.631466E 01	0.0
26	85.00	5.00	0.298570E 01	0.432372E 01	0.0
27	85.00	20.00	0.269564E 01	0.685415E 01	0.0
28	85.00	35.00	0.367020E 01	0.691756E 01	0.0
29	85.00	50.00	0.536769E 01	0.845369E 01	0.0
30	85.00	65.00	0.621516E 01	0.101685E 02	0.0
31	100.00	5.00	0.179425E 01	0.355668E 01	0.0
32	100.00	20.00	0.208209E 01	0.474893E 01	0.0
33	100.00	35.00	0.287039E 01	0.475273E 01	0.0
34	100.00	50.00	0.365943E 01	0.516024E 01	0.0
35	100.00	65.00	0.311398E 01	0.639583E 01	0.0
36	115.00	5.00	0.132207E 01	0.281021E 01	0.0
37	115.00	20.00	0.160056E 01	0.322563E 01	0.0
38	115.00	35.00	0.193267E 01	0.334218E 01	0.0
39	115.00	50.00	0.202008E 01	0.335032E 01	0.0
40	115.00	65.00	0.141982E 01	0.320296E 01	0.0
41	130.00	5.00	0.107610E 01	0.236386E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR	LOCATIONS UTM,KILOMETERS		NEW CONCENTRATION VALUE	AMOUNT REDUCED	AMOUNT IN EXCESS
NUMBER	X	Y	MICROGRAMS/CUBIC METER	MICROGRAMS/CUBIC METER	MICROGRAMS/CUBIC METER
42	130.00	20.00	0.125590E 01	0.254343E 01	0.0
43	130.00	35.00	0.130835E 01	0.255788E 01	0.0
44	130.00	50.00	0.112622E 01	0.256755E 01	0.0
45	130.00	65.00	0.756623E 00	0.263412E 01	0.0
46	145.00	5.00	0.849444E 00	0.198024E 01	0.0
47	145.00	20.00	0.893687E 00	0.199068E 01	0.0
48	145.00	35.00	0.874215E 00	0.196056E 01	0.0
49	145.00	50.00	0.620381E 00	0.191864E 01	0.0
50	145.00	65.00	0.371846E 00	0.176219E 01	0.0
51	55.00	15.00	0.142541E 01	0.182089E 01	0.0
52	75.00	30.00	0.352056E 01	0.245946E 02	0.0
53	77.50	57.50	0.691703E 01	0.119091E 02	0.0
54	75.00	60.00	0.595763E 01	0.850515E 01	0.0
55	82.50	60.00	0.532053E 01	0.874395E 01	0.0
56	90.00	60.00	0.629787E 01	0.116264E 02	0.0
57	95.00	57.50	0.465806E 01	0.703791E 01	0.0
58	65.00	70.00	0.487881E 01	0.592396E 01	0.0
59	75.00	75.00	0.467830E 01	0.793538E 01	0.0
60	95.00	82.50	0.178524E 01	0.663776E 01	0.0
61	10.00	80.00	0.157035E 01	0.284804E 01	0.0
62	10.00	95.00	0.122917E 01	0.259440E 01	0.0
63	10.00	110.00	0.782817E 00	0.235664E 01	0.0
64	25.00	80.00	0.198548E 01	0.327516E 01	0.0
65	25.00	95.00	0.133948E 01	0.306853E 01	0.0
66	25.00	110.00	0.818774E 00	0.268046E 01	0.0
67	40.00	80.00	0.259796E 01	0.402673E 01	0.0
68	40.00	95.00	0.149395E 01	0.376903E 01	0.0
69	40.00	110.00	0.836535E 00	0.311117E 01	0.0
70	55.00	80.00	0.318074E 01	0.475969E 01	0.0
71	55.00	95.00	0.166410E 01	0.502842E 01	0.0
72	55.00	110.00	0.933596E 00	0.345712E 01	0.0
73	70.00	80.00	0.363080E 01	0.639923E 01	0.0
74	70.00	95.00	0.187271E 01	0.947247E 01	0.0
75	70.00	110.00	0.101430E 01	0.358966E 01	0.0
76	85.00	80.00	0.420607E 01	0.148902E 02	0.0
77	85.00	95.00	0.180507E 01	0.110149E 02	0.0
78	85.00	110.00	0.930351E 00	0.332036E 01	0.0
79	100.00	80.00	0.129418E 01	0.460388E 01	0.0
80	100.00	95.00	0.923943E 00	0.299971E 01	0.0
81	100.00	110.00	0.645985E 00	0.179504E 01	0.0
82	115.00	80.00	0.624050E 00	0.268318E 01	0.0

Figure 2-15. (Continued)

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
83	115.00	95.00	0.265174E 00	0.190443E 01	0.0
84	115.00	110.00	0.200683E 00	0.128462E 01	0.0
85	130.00	80.00	0.492627E 00	0.424323E 01	0.0
86	130.00	95.00	0.373421E-01	0.153633E 01	0.0
87	130.00	110.00	-0.626993E-01	0.914677E 00	0.0
88	145.00	80.00	0.969906E-01	0.146725E 01	0.0
89	145.00	95.00	-0.691614E-01	0.904192E 00	0.0
90	145.00	110.00	-0.192050E 00	0.681761E 00	0.0
91	79.20	63.50	0.614326E 01	0.873695E 01	0.0
92	65.00	56.30	0.448683E 01	0.735675E 01	0.0
93	83.90	71.00	0.592455E 01	0.173513E 02	0.0
94	69.60	68.90	0.101132E 02	0.287596E 02	0.0
95	90.30	72.60	0.682996E 01	0.235625E 02	0.0
96	81.90	96.50	0.177588E 01	0.140522E 02	0.0
97	126.80	85.20	0.408746E 00	0.374242E 01	0.0
98	75.00	17.10	0.345003E 01	0.900115E 01	0.0
99	82.10	54.90	0.734244E 01	0.131887E 02	0.0
100	60.00	71.10	0.426907E 01	0.527913E 01	0.0
101	88.50	74.60	0.893587E 01	0.212266E 02	0.0
102	91.50	90.00	0.184[illegible]E 01	0.820310E 01	0.0
103	60.00	65.30	0.731694E 01	0.203501E 02	0.0
104	75.20	53.50	0.486077E 01	0.736992E 01	0.0
105	70.50	23.00	0.303502E 01	0.156014E 02	0.0
106	71.20	9.50	0.533297E 01	0.543112E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

JURISDICTION AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
STATE A 1	12	6 G **	9.47	54.06	49.82	0.523	28.76
STATE B 2	14	5 **	25.06	28.20	16.30	0.250	42.02
STRATEGY TOTAL	26	11	34.53	82.26	66.12	0.773	32.03

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

Figure 2-15. (Continued)

CENTRAL CITY OF AQCR II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

REGIONAL EMISSIONS		REGIONAL FUEL USE	
EXISTING EMISSIONS (TONS/DAY)		COAL (TONS/DAY).....	10785.000
POINT SOURCES....	82.3	RESID. OIL (GAL/DAY).....	2553.000
AREA SOURCES.....	20.1	DIST. OIL (GAL/DAY).....	31800.000
TOTAL EMISSIONS..	102.3	GAS (1000 CU. FT./DAY)...	6348000.000
CONTROLLED EMISSIONS (TONS/DAY)			
POINT SOURCES....	16.1		
AREA SOURCES.....	15.0		
TOTAL EMISSIONS..	31.2		
CONTROLLED REDUCTION..	71.1	PERCENTAGE REDUCTION...	69.5 %

REGIONAL CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 32.03 DOLLARS/TON

REDUCTION IN GROUND LEVEL CONCENTRATION . . . 130331. DOLLARS/MICROGRAM/CUBIC METER

Figure 2-15. (Continued)

NOT REPRODUCIBLE

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS

REGION: 907

DATE:DECEMBER 31, 1970

PROJECTED EMISSION INVENTORY

SOURCE NO.	SOURCE ID	Pade	PROJECTED ALLOWABLE EMISSION RATE	PROJECTED EXISTING EMISSION RATE	PROJECTION FACTOR
1	2819 3420	1	0.0	0.0	0.0
2	4911 510	1	9.19	3.60	2.00
3	2119 125	1	0.10	0.10	1.00
4	2819 3402	1	0.0	0.0	0.0
5	281916003	1	0.72	21.90	1.00
6	295115001	1	0.07	0.97	1.00
7	324110001	1	1.39	2.79	1.00
8	3295 5101	1	0.24	19.18	1.00
9	333227001	1	0.90	0.39	1.25
10	333227003	1	0.26	0.02	1.25
11	495313001	1	0.41	4.21	1.65
12	495313102	1	0.04	0.33	1.00
13	2800 4110	2	1.70	4.00	1.00
14	3323 7130	2	0.28	0.10	1.00
15	3323 7140	2	0.28	0.10	1.00
16	4911 620	2	0.23	4.20	1.00
17	4911 730	2	21.81	10.77	1.33
18	2819 3302	2	0.52	0.39	1.50
19	287126001	2	0.58	8.00	1.00
20	2911 6101	2	0.43	0.12	1.00
21	331211101	2	3.33	1.00	1.00
22	331211102	2	1.06	0.74	1.00
23	331211103	2	0.18	0.27	1.00
24	3323 7201	2	0.13	1.01	1.00
25	495313104	2	0.0	0.0	0.0
26	495313202	2	0.03	0.22	1.00
27	9999 100	1	0.01	0.01	1.12
28	9999 200	1	0.02	0.03	1.12
29	9999 300	1	0.11	0.13	1.34
30	9999 400	1	0.11	0.13	1.12
31	9999 500	1	0.01	0.02	1.12
32	9999 700	1	0.22	0.28	1.46
33	9999 900	1	1.50	1.90	1.12
34	9999 1000	1	1.18	2.58	1.12
35	9999 1100	1	1.59	2.02	1.12
36	9999 1200	1	4.42	5.60	1.12
37	9999 1300	1	0.88	1.12	1.12
38	9999 1400	1	0.97	1.23	1.12
39	9999 1500	1	0.10	0.12	1.12
40	9999 1800	1	0.22	0.28	1.12
41	9999 2000	1	1.42	1.79	1.12
42	9999 2200	1	0.62	0.78	1.12
43	9999 2500	1	0.04	0.04	1.12
44	9999 600	2	0.02	0.02	1.30
45	9999 800	2	0.02	0.03	1.30
46	9999 1600	2	0.01	0.01	1.30
47	9999 1700	2	0.02	0.02	1.30
48	9999 1900	2	0.82	0.97	1.30
49	9999 2100	2	1.75	2.08	1.30

Figure 2-15. (Continued)

[illegible]	[illegible]	[illegible]	PROJECTED ALLOWABLE EMISSION RATE	PROJECTED EXISTING EMISSION RATE	PROJECTION EMISSION
[illegible]	[illegible] 2300	2	0.25	0.39	1.30
[illegible]	[illegible] 2400	2	0.74	1.17	1.30
[illegible]	[illegible] 2500	2	0.10	0.12	1.30
[illegible]	[illegible] 2700	2	0.05	0.06	1.30
[illegible]	[illegible] 2800	2	0.16	0.19	1.24
[illegible]	[illegible] 2900	2	0.11	0.13	1.30

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS

REGION: 907

DATE:DECEMBER 31, 1970

PROJECTED EMISSION SUMMARY

POLITICAL JURISDICTION	TOTAL PROJECTED ALLOWABLE EMISSION RATE	TOTAL PROJECTED EXISTING EMISSION RATE
1	26.76	71.56
2	34.59	36.11

Figure 2-15. (Continued)

PROJECTION FOR

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
1	10.00	5.00	0.252061E 00	0.982392E 00	0.0
2	10.00	20.00	0.490974E 00	0.147494E 01	0.0
3	10.00	35.00	0.934697E 00	0.205621E 01	0.0
4	10.00	50.00	0.147221E 01	0.262248E 01	0.0
5	10.00	65.00	0.199254E 01	0.280398E 01	0.0
6	25.00	5.00	0.382277E 00	0.106965E 01	0.0
7	25.00	20.00	0.697156E 00	0.164985E 01	0.0
8	25.00	35.00	0.110418E 01	0.249904E 01	0.0
9	25.00	50.00	0.183330E 01	0.326862E 01	0.0
10	25.00	65.00	0.258259E 01	0.328668E 01	0.0
11	40.00	5.00	0.642372E 00	0.107021E 01	0.0
12	40.00	20.00	0.974421E 00	0.171681E 01	0.0
13	40.00	35.00	0.137129E 01	0.347205E 01	0.0
14	40.00	50.00	0.239880E 01	0.399533E 01	0.0
15	40.00	65.00	0.353923E 01	0.398660E 01	0.0
16	55.00	5.00	0.160604E 01	0.123925E 01	0.0
17	55.00	20.00	0.187597E 01	0.223314E 01	0.0
18	55.00	35.00	0.196784E 01	0.678147E 01	0.0
19	55.00	50.00	0.281105E 01	0.455391E 01	0.0
20	55.00	65.00	0.472719E 01	0.452681E 01	0.0
21	70.00	5.00	0.639794E 01	0.314553E 01	0.0
22	70.00	20.00	0.348397E 01	0.104785E 02	0.0
23	70.00	35.00	0.377883E 01	0.240278E 02	0.0
24	70.00	50.00	0.419442E 01	0.638576E 01	0.0
25	70.00	65.00	0.618444E 01	0.555348E 01	0.0
26	85.00	5.00	0.367062E 01	0.389949E 01	0.0
27	85.00	20.00	0.309520E 01	0.651925E 01	0.0
28	85.00	35.00	0.406575E 01	0.642345E 01	0.0
29	85.00	50.00	0.558530E 01	0.713100E 01	0.0
30	85.00	65.00	0.730655E 01	0.102569E 02	0.0
31	100.00	5.00	0.216345E 01	0.338927E 01	0.0
32	100.00	20.00	0.241259E 01	0.460341E 01	0.0
33	100.00	35.00	0.328508E 01	0.460134E 01	0.0
34	100.00	50.00	0.414930E 01	0.494795E 01	0.0
35	100.00	65.00	0.357011E 01	0.645866E 01	0.0
36	115.00	5.00	0.160377E 01	0.269517E 01	0.0
37	115.00	20.00	0.189373E 01	0.313555E 01	0.0
38	115.00	35.00	0.230604E 01	0.324146E 01	0.0
39	115.00	50.00	0.235788E 01	0.327187E 01	0.0
40	115.00	65.00	0.170180E 01	0.319062E 01	0.0
41	130.00	5.00	0.132013E 01	0.229794E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

PROJECTION FOR

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
42	130.00	20.00	0.150969E 01	0.246980E 01	0.0
43	130.00	35.00	0.155488E 01	0.248549E 01	0.0
44	130.00	50.00	0.135011E 01	0.252139E 01	0.0
45	130.00	65.00	0.940374E 00	0.260946E 01	0.0
46	145.00	5.00	0.105523E 01	0.192649E 01	0.0
47	145.00	20.00	0.109688E 01	0.193386E 01	0.0
48	145.00	35.00	0.107009E 01	0.190787E 01	0.0
49	145.00	50.00	0.784225E 00	0.188303E 01	0.0
50	145.00	65.00	0.502383E 00	0.173761E 01	0.0
51	55.00	15.00	0.187686E 01	0.159705E 01	0.0
52	75.00	30.00	0.399930E 01	0.242265E 02	0.0
53	77.50	57.50	0.568361E 01	0.654768E 01	0.0
54	75.00	60.00	0.587368E 01	0.598205E 01	0.0
55	82.50	60.00	0.563747E 01	0.748587E 01	0.0
56	90.00	60.00	0.715201E 01	0.116661E 02	0.0
57	95.00	57.50	0.526028E 01	0.693265E 01	0.0
58	65.00	70.00	0.546355E 01	0.561936E 01	0.0
59	75.00	75.00	0.535191E 01	0.791995E 01	0.0
60	95.00	82.50	0.211234E 01	0.656430E 01	0.0
61	10.00	80.00	0.184760E 01	0.274731E 01	0.0
62	10.00	95.00	0.147152E 01	0.250586E 01	0.0
63	10.00	110.00	0.982882E 00	0.228478E 01	0.0
64	25.00	80.00	0.229736E 01	0.314158E 01	0.0
65	25.00	95.00	0.159939E 01	0.297835E 01	0.0
66	25.00	110.00	0.104208E 01	0.261365E 01	0.0
67	40.00	80.00	0.297231E 01	0.388904E 01	0.0
68	40.00	95.00	0.177611E 01	0.370374E 01	0.0
69	40.00	110.00	0.108013E 01	0.301975E 01	0.0
70	55.00	80.00	0.363298E 01	0.467472E 01	0.0
71	55.00	95.00	0.197386E 01	0.494930E 01	0.0
72	55.00	110.00	0.124023E 01	0.333151E 01	0.0
73	70.00	80.00	0.416617E 01	0.638228E 01	0.0
74	70.00	95.00	0.218019E 01	0.942625E 01	0.0
75	70.00	110.00	0.132147E 01	0.347016E 01	0.0
76	85.00	80.00	0.474038E 01	0.150308E 02	0.0
77	85.00	95.00	0.212428E 01	0.109739E 02	0.0
78	85.00	110.00	0.111956E 01	0.329629E 01	0.0
79	100.00	80.00	0.159700E 01	0.457120E 01	0.0
80	100.00	95.00	0.116204E 01	0.294544E 01	0.0
81	100.00	110.00	0.814945E 00	0.176725E 01	0.0
82	115.00	80.00	0.810328E 00	0.265612E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY II PART-HEAT INPUT & POTENTIAL EMISSION STDS DECEMBER 31, 1970

PROJECTION FOR

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 15.0 MICROGRAMS/CUBIC METER PARTICULATES
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
83	115.00	95.00	0.415708E 00	0.136997E 01	0.0
84	115.00	110.00	0.324553E 00	0.125367E 01	0.0
85	130.00	80.00	0.624147E 00	0.422140E 01	0.0
86	130.00	95.00	0.138105E 00	0.150598E 01	0.0
87	130.00	110.00	0.297842E-01	0.392219E 00	0.0
88	145.00	80.00	0.196464E 00	0.144833E 01	0.0
89	145.00	95.00	0.132132E-01	0.885609E 00	0.0
90	145.00	110.00	-0.126820E 00	0.660020E 00	0.0
91	79.20	63.50	0.666210E 01	0.761263E 01	0.0
92	65.00	56.30	0.493989E 01	0.674004E 01	0.0
93	83.90	71.00	0.630964E 01	0.176743E 02	0.0
94	88.60	68.90	0.106192E 02	0.296467E 02	0.0
95	90.30	72.60	0.734700E 01	0.237296E 02	0.0
96	81.90	96.50	0.207259E 01	0.140233E 02	0.0
97	126.80	85.20	0.536449E 00	0.371249E 01	0.0
98	75.00	17.10	0.419392E 01	0.851503E 01	0.0
99	82.10	54.90	0.564314E 01	0.690069E 01	0.0
100	60.00	71.10	0.478944E 01	0.500192E 01	0.0
101	38.50	74.60	0.944468E 01	0.212960E 02	0.0
102	91.50	90.00	0.217248E 01	0.824775E 01	0.0
103	90.00	65.30	0.807552E 01	0.207757E 02	0.0
104	75.20	53.50	0.526793E 01	0.639996E 01	0.0
105	70.50	23.00	0.362939E 01	0.152774E 02	0.0
106	71.20	9.50	0.684089E 01	0.461362E 01	0.0

Figure 2-15. (Continued)

```
&RSTRT
AQSTAN=  35.000000    ,  15.000000    ,ASFAC=  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,IPUNCH=          1,
ISTATP=          0,          0,          0,          0,          0,          0,          0,          0,          0,          0,
          0,          0,ISTATS=          0,          0,          0,          0,          0,          0,          0,          0,
          0,          0,          0,          0,NSEL12=          0,PARAVG= 0.0          , 0.0          , 0.0          ,IFAC=
          0,PARCAL= -2.5899992    ,  1.3314991    ,PARPER= 0.0          , 0.0          , 0.0          ,REGION= -3165.3679    ,
-0.95977588E 30, -3230.2441    , 0.88628918    , -14.235785    ,-0.36987537E 48,-0.17417724E 11,-0.40409455E 60,-0.17289712E 26,
 0.88628775    ,-0.14866555E 26, -16448.250    , 0.25098038    , 0.25098038    , 0.25098038    , 0.25098038    , 0.25098038    ,
 0.25098038    ,SGDP= 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,
 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,SGDS= 0.0          ,
 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,
 0.0          , 0.0          , 0.0          ,SO2AVG= 0.0          , 0.0          , 0.0          ,SO2CAL=  13.099999    ,
 0.62029999    ,SO2PER= 0.0          , 0.0          , 0.0          ,UTM= 0.0          , 0.0          ,IPROJ=          0,IJUR=
          2,NREGON=          907,DATE= -50627.770    ,-0.91978874E 24, 0.95290250    , 0.94522041    ,-0.15754294E 58,ASPRJ=
  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,
  1.0000000    ,  1.0000000    ,  1.0000000    ,  1.0000000    ,BACKGR=  1.0000000    ,  2.0000000
&END
```


Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD

INPUT CONTROL STRATEGY

POLLUTANT: SO2

DECEMBER 31, 1970

POLITICAL JURISDICTION	EMISSION STANDARD		
	FUEL COMBUSTION	INDUSTRIAL PROCESS	SOLID WASTE
1 STATE A	1	1	1
2 STATE B	1	1	1

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2819	34	20	0	$ 0.0	0.0	0.0	20.36	20.36	20.36
4911	5	10	0	$ 0.0	0.0	0.0	192.08	192.08	192.08

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTS ON

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2119	1	25	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
2819	34	2	0	$ 0.0	0.0	0.0	23.70	23.70	23.70
2819	160	3	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
2951	150	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3241	100	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3295	51	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3332	270	1	0	$ 0.0	0.0	0.0	203.00	203.00	203.00
3332	270	3	0	$ 0.0	0.0	0.0	23.20	23.20	23.20

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	130	1	0	$ 0.0	0.0	0.0	0.30	0.30	0.30
4953	131	2	0	$ 0.0	0.0	0.0	0.22	0.22	0.22

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD

DECEMBER 31, 19[illegible]

JURISDICTION SUMMARY

STATE A JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 1	2	0	212.44	212.44	0.0	0.0	0.0
INDUSTRIAL PROCESS 1	8	0	254.90	254.90	0.0	0.0	0.0
SOLID WASTE DISPOSAL 1	2	0	0.52	0.52	0.0	0.0	0.0
JURISDICTION TOTAL	12	0	467.86	467.86	0.0	0.0	0.0

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)

POINT SOURCES.... 467.9
AREA SOURCES..... 60.7
TOTAL EMISSIONS.. 528.6
CONTROLLED REDUCTION.. 0.0

CONTROLLED EMISSIONS (TONS/DAY)

POINT SOURCES.... 467.9
AREA SOURCES..... 60.7
TOTAL EMISSIONS.. 528.6
PERCENTAGE REDUCTION... 0.0 %

JURISDICTION FUEL USE

COAL (TONS/DAY)..... 3721.000
RESID. OIL (GAL/DAY)..... 2553.000
DIST. OIL (GAL/DAY)..... 0.0
GAS (1000 CU. FT./DAY)... 8000.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 0.0 DOLLARS/TON

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD — DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE 8 JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISING	ALLOWABLE	CONTROLLED
2800	41	10	0	$ 0.0	0.0	0.0	25.00	25.00	25.00
3323	71	30	0	$ 0.0	0.0	0.0	0.80	0.80	0.80
3323	71	40	0	$ 0.0	0.0	0.0	0.80	0.80	0.80
4911	6	20	0	$ 0.0	0.0	0.0	3.59	3.59	3.59
4911	7	30	0	$ 0.0	0.0	0.0	377.20	377.20	377.20

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTS ON
SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE 8 JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2819	33	2	0	$ 0.0	0.0	0.0	19.10	19.10	19.10
2871	260	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
2911	61	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3312	111	1	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3312	111	2	0	$ 0.0	0.0	0.0	0.0	0.0	0.0
3312	111	3	0	$ 0.0	0.0	0.0	0.23	0.23	0.23
4323	72	1	0	$ 0.0	0.0	0.0	0.92	0.92	0.92

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 1 FOR SULFUR DIOXIDE CONTROL
STATE 8 JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	131	4	0	$ 0.0	0.0	0.0	0.00	0.00	0.00
4953	132	2	0	$ 0.0	0.0	0.0	0.15	0.15	0.15

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD

DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE B JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EMISSIONS FOR POINT SOURCES (TONS/DAY) EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 1	5	0	407.39	407.39	0.0	0.0	0.0
INDUSTRIAL PROCESS 1	7	0	20.25	20.25	0.0	0.0	0.0
SOLID WASTE DISPOSAL 1	2	0	0.15	0.15	0.0	0.0	0.0
JURISDICTION TOTAL	14	0	427.79	427.79	0.0	0.0	0.0

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)
POINT SOURCES.... 427.8
AREA SOURCES..... 15.9
TOTAL EMISSIONS.. 443.7
CONTROLLED REDUCTION.. 0.0

CONTROLLED EMISSIONS (TONS/DAY)
POINT SOURCES.... 427.8
AREA SOURCES..... 15.9
TOTAL EMISSIONS.. 443.7
PERCENTAGE REDUCTION... 0.0 %

JURISDICTION FUEL USE

COAL (TONS/DAY).....	7064.000
RESID. OIL (GAL/DAY).....	0.0
DIST. OIL (GAL/DAY).....	31800.000
GAS (1000 CU. FT./DAY)...	6340000.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 0.0 DOLLARS/TON

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
1	10.00	5.00	0.153889E 02	0.0	0.0
2	10.00	20.00	0.159778E 02	0.0	0.0
3	10.00	35.00	0.163611E 02	0.0	0.0
4	10.00	50.00	0.164804E 02	0.0	0.0
5	10.00	65.00	0.163565E 02	0.0	0.0
6	25.00	5.00	0.163027E 02	0.0	0.0
7	25.00	20.00	0.175014E 02	0.0	0.0
8	25.00	35.00	0.180104E 02	0.0	0.0
9	25.00	50.00	0.178954E 02	0.0	0.0
10	25.00	65.00	0.175859E 02	0.0	0.0
11	40.00	5.00	0.180248E 02	0.0	0.0
12	40.00	20.00	0.201914E 02	0.0	0.0
13	40.00	35.00	0.210304E 02	0.0	0.0
14	40.00	50.00	0.202981E 02	0.0	0.0
15	40.00	65.00	0.196988E 02	0.0	0.0
16	55.00	5.00	0.228409E 02	0.0	0.0
17	55.00	20.00	0.260689E 02	0.0	0.0
18	55.00	35.00	0.284428E 02	0.0	0.0
19	55.00	50.00	0.232707E 02	0.0	0.0
20	55.00	65.00	0.234225E 02	0.0	0.0
21	70.00	5.00	0.590305E 02	0.0	0.240305E 02
22	70.00	20.00	0.533471E 02	0.0	0.183471E 02
23	70.00	35.00	0.390112E 02	0.0	0.401117E 01
24	70.00	50.00	0.286430E 02	0.0	0.0
25	70.00	65.00	0.325891E 02	0.0	0.0
26	85.00	5.00	0.343362E 02	0.0	0.0
27	85.00	20.00	0.289463E 02	0.0	0.0
28	85.00	35.00	0.261368E 02	0.0	0.0
29	85.00	50.00	0.361348E 02	0.0	0.113475E 01
30	85.00	65.00	0.461094E 02	0.0	0.111094E 02
31	100.00	5.00	0.209440E 02	0.0	0.0
32	100.00	20.00	0.197947E 02	0.0	0.0
33	100.00	35.00	0.200671E 02	0.0	0.0
34	100.00	50.00	0.220536E 02	0.0	0.0
35	100.00	65.00	0.209317E 02	0.0	0.0
36	115.00	5.00	0.175054E 02	0.0	0.0
37	115.00	20.00	0.172282E 02	0.0	0.0
38	115.00	35.00	0.172974E 02	0.0	0.0
39	115.00	50.00	0.174498E 02	0.0	0.0
40	115.00	65.00	0.168082E 02	0.0	0.0
41	130.00	5.00	0.160281E 02	0.0	0.0

Figure 2-15. (Continued)

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
42	130.00	20.00	0.159875E 02	0.0	0.0
43	130.00	35.00	0.159365E 02	0.0	0.0
44	130.00	50.00	0.157765E 02	0.0	0.0
45	130.00	65.00	0.155835E 02	0.0	0.0
46	145.00	5.00	0.152346E 02	0.0	0.0
47	145.00	20.00	0.152258E 02	0.0	0.0
48	145.00	35.00	0.151747E 02	0.0	0.0
49	145.00	50.00	0.150674E 02	0.0	0.0
50	145.00	65.00	0.149788E 02	0.0	0.0
51	55.00	15.00	0.259907E 02	0.0	0.0
52	75.00	30.00	0.310712E 02	0.0	0.0
53	77.50	57.50	0.651320E 02	0.0	0.301320E 02
54	75.00	60.00	0.448034E 02	0.0	0.980344E 01
55	82.50	60.00	0.378141E 02	0.0	0.281407E 01
56	90.00	60.00	0.392156E 02	0.0	0.421562E 01
57	95.00	57.50	0.262800E 02	0.0	0.0
58	65.00	70.00	0.268995E 02	0.0	0.0
59	75.00	75.00	0.287066E 02	0.0	0.0
60	95.00	82.50	0.186948E 02	0.0	0.0
61	10.00	80.00	0.161605E 02	0.0	0.0
62	10.00	95.00	0.158941E 02	0.0	0.0
63	10.00	110.00	0.156170E 02	0.0	0.0
64	25.00	80.00	0.171131E 02	0.0	0.0
65	25.00	95.00	0.165439E 02	0.0	0.0
66	25.00	110.00	0.161265E 02	0.0	0.0
67	40.00	80.00	0.186622E 02	0.0	0.0
68	40.00	95.00	0.173205E 02	0.0	0.0
69	40.00	110.00	0.168780E 02	0.0	0.0
70	55.00	80.00	0.208903E 02	0.0	0.0
71	55.00	95.00	0.185750E 02	0.0	0.0
72	55.00	110.00	0.184140E 02	0.0	0.0
73	70.00	80.00	0.241218E 02	0.0	0.0
74	70.00	95.00	0.190353E 02	0.0	0.0
75	70.00	110.00	0.185754E 02	0.0	0.0
76	85.00	80.00	0.249853E 02	0.0	0.0
77	85.00	95.00	0.186936E 02	0.0	0.0
78	85.00	110.00	0.161067E 02	0.0	0.0
79	100.00	80.00	0.176578E 02	0.0	0.0
80	100.00	95.00	0.165489E 02	0.0	0.0
81	100.00	110.00	0.154453E 02	0.0	0.0
82	115.00	80.00	0.158513E 02	0.0	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III: SO2 - NULL STANDARD DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
83	115.00	95.00	0.153472E 02	0.0	0.0
84	115.00	110.00	0.149280E 02	0.0	0.0
85	130.00	80.00	0.159828E 02	0.0	0.0
86	130.00	95.00	0.149172E 02	0.0	0.0
87	130.00	110.00	0.146080E 02	0.0	0.0
88	145.00	80.00	0.147034E 02	0.0	0.0
89	145.00	95.00	0.144998E 02	0.0	0.0
90	145.00	110.00	0.143942E 02	0.0	0.0
91	79.20	63.50	0.394230E 02	0.0	0.442297E 01
92	65.00	56.30	0.287228E 02	0.0	0.0
93	83.90	71.00	0.345257E 02	0.0	0.0
94	88.60	68.90	0.532353E 02	0.0	0.182353E 02
95	90.30	72.60	0.291406E 02	0.0	0.0
96	81.90	96.50	0.184053E 02	0.0	0.0
97	126.80	85.20	0.158463E 02	0.0	0.0
98	75.00	17.10	0.536900E 02	0.0	0.186900E 02
99	82.10	54.90	0.751076E 02	0.0	0.401076E 02
100	60.00	71.10	0.243137E 02	0.0	0.0
101	88.50	74.60	0.360592E 02	0.0	0.1059195 01
102	91.50	90.00	0.186635E 02	0.0	0.0
103	90.00	65.30	0.346129E 02	0.0	0.0
104	75.20	53.50	0.345183E 02	0.0	0.0
105	70.50	23.00	0.568190E 02	0.0	0.218190E 02
106	71.20	9.50	0.661008E 02	0.0	0.311008E 02

Figure 2-15. (Continued)

. CENTRAL CITY STRATEGY III SO2 - NULL STANDARD

DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

JURISDICTION AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
STATE A 1	12	0	467.86	467.86	0.0	0.0	0.0
STATE B 2	14	0	427.79	427.79	0.0	0.0	0.0
STRATEGY TOTAL	26	0	895.65	895.65	0.0	0.0	0.0

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY III SO2 - NULL STANDARD

DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

REGIONAL EMISSIONS

EXISTING EMISSIONS (TONS/DAY)		CONTROLLED EMISSIONS (TONS/DAY)	
POINT SOURCES....	895.7	POINT SOURCES....	895.7
AREA SOURCES.....	76.6	AREA SOURCES.....	76.6
TOTAL EMISSIONS..	972.3	TOTAL EMISSIONS..	972.3
CONTROLLED REDUCTION..	0.0	PERCENTAGE REDUCTION...	0.0 %

REGIONAL FUEL USE

COAL (TONS/DAY).....	10785.000
RESID. OIL (GAL/DAY).....	2553.000
DIST. OIL (GAL/DAY).....	31800.000
GAS (1000 CU. FT./DAY)...	6348000.000

REGIONAL CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 0.0 DOLLARS/TON

REDUCTION IN GROUND LEVEL CONCENTRATION . . . 0. DOLLARS/MICROGRAM/CUBIC METER

Figure 2-15. (Continued)

```
&RSTRT
XSTAK=  35.000000     ,  15.000000     ,ASFAC= 0.69999999     , 0.66999996     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,
  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,
  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,IPUNCH=           1,
ISTATP=           0,           0,           0,           0,           0,           0,           0,           0,           0,           0,
           0,           0,ISTATS=           0,           0,           0,           0,           0,           0,           0,           0,
           0,           0,           0,           0,NSEL12=           0,PARAVG= 0.0          , 0.0          , 0.0          ,IFAC=
           0,PARCAL= -2.5899992     ,  1.3314991     ,PARPER= 0.0          , 0.0          , 0.0          ,REGION= -3165.3679     ,
-0.059775[illegible]E 30, -3230.2441     , 0.88628918     , -14.235785     ,-0.36987781E 48, 0.88609231     , 0.37599003     ,-0.18448371E 44,
-0.32100[illegible]E 30,-0.95338769E 24, 0.46673906E 19,-0.32530028E 10,-0.35261411E 42,-0.14755993E 26,-0.77505793E 41, 0.25098038     ,
 0.25098038     ,SGDP= 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,
 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,SGDS= 0.0          ,
 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          , 0.0          ,
 0.0          , 0.0          , 0.0          ,SO2AVG= 0.0          , 0.0          , 0.0          ,SO2CAL=  13.099999     ,
 0.62029999     ,SO2PER= 0.0          , 0.0          , 0.0          ,UTM= 0.0          , 0.0          ,IPROJ=           0,IJUR=
           2,NREGN=         907,DATE= -50627.770     ,-0.91978874E 24, 0.95290250     , 0.94522041     ,-0.15754294E 58,ASPRJ=
  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,
  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,
  1.0000000     ,  1.0000000     ,  1.0000000     ,  1.0000000     ,BACKGR=  1.0000000     ,  2.0000000
&END
```

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS

INPUT CONTROL STRATEGY

POLLUTANT: SO2 DECEMBER 31, 1970

POLITICAL JURISDICTION	EMISSION STANDARD		
	FUEL COMBUSTION	INDUSTRIAL PROCESS	SOLID WASTE
1 STATE A	23	13	13
2 STATE B	24	18	18

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTS ION

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 23 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISING	ALLOWABLE	CONTROLLED
2819	34	20	30	$ 25000.00	0.34301	0.32998	20.36	13.64	13.38
4911	5	10	* 30	$ 751692.00	0.12433	0.33330	192.08	128.06	129.77

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued.

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 13 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY) EXISTING	ALLOWABLE	CONTROLLED
2819	34	2	13	$ 167281.0	.85	0.64734	23.70	8.36	3.56
3332	270	1	* 13	$ 3465018.0	.975	0.93338	203.00	13.52	5.08
3332	270	3	* 13	$ 96120.19	0.80000	0.97459	28.20	0.72	5.64

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 13 FOR SULFUR DIOXIDE CONTROL
STATE A JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	130	1	0	$ 0.0	0.0	0.0	0.30	6.97	0.30
4953	131	2	** 0	$ 0.0	0.0	1.00000	0.22	0.0	0.22

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE A JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 23	2	2 *	141.70	212.44	69.29	0.777	30.71
INDUSTRIAL PROCESS 13	3	3 *	22.60	254.90	240.63	3.928	44.73
SOLID WASTE DISPOSAL 13	2	0 **	6.97	0.52	0.0	0.0	0.0
JURISDICTION TOTAL	7	5	171.27	467.86	309.92	4.705	41.59

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

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JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)
POINT SOURCES.... 467.9
AREA SOURCES..... 60.7
TOTAL EMISSIONS.. 528.6
CONTROLLED REDUCTION.. 328.1

CONTROLLED EMISSIONS (TONS/DAY)
POINT SOURCES.... 157.9
AREA SOURCES..... 42.5
TOTAL EMISSIONS.. 200.4
PERCENTAGE REDUCTION... 62.1 %

JURISDICTION FUEL USE

COAL (TONS/DAY).....	3169.739
RESID. OIL (GAL/DAY).....	2552.998
DIST. OIL (GAL/DAY).....	0.0
GAS (1000 CU. FT./DAY)...	8000.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 41.59 DOLLARS/TON

Figure 2-15. (Continued)

EMISSION STANDARD EFFECTS'ON

SOURCE EMISSIONS

FUEL COMBUSTION STANDARD 24 FOR SULFUR DIOXIDE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2800	41	10	* 31	$ 333095.00	0.55062	0.70740	25.00	7.31	11.23
3323	71	30	* 31	$ 29017.75	0.11763	0.29245	0.80	0.57	0.71
3323	71	40	* 31	$ 29017.75	0.11763	0.29245	0.80	0.57	0.71
4911	6	20	* 31	$ 21887.81	0.61814	0.73326	3.59	1.20	1.37
4911	7	30	* 31	$ 2298569.00	0.61813	0.66674	377.20	125.70	144.04

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS — DECEMBER 31, 1970

EMISSION STANDARD EFFECTSION

SOURCE EMISSIONS

INDUSTRIAL PROCESS STANDARD 18 FOR SULFUR DIOXIDE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
2819	33	2	* 13	$ 104277.81	0.80000	0.84019	19.10	3.05	3.82
3312	111	3	0	$ 0.0	0.0	0.0	0.23	3.74	0.23
3323	72	1	** 0	$ 0.0	0.0	0.83027	0.92	0.16	0.92

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS

DECEMBER 31, 1970

EMISSION STANDARD EFFECTS ON

SOURCE EMISSIONS

SOLID WASTE DISPOSAL STANDARD 18 FOR SULFUR DIOXIDE CONTROL
STATE B JURISDICTION

SIC CODE	SITE NO.	PROC NO.	DEVICE ID	ANNUAL DEVICE COST	DEVICE EFFICIENCY	REQUIRED EFFICIENCY	EMISSIONS (TONS/DAY)		
							EXISTING	ALLOWABLE	CONTROLLED
4953	131	4	0	$ 0.0	0.0	0.0	0.00	0.47	0.00
4953	132	2	0	$ 0.0	0.0	0.0	0.15	0.18	0.15

(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ALLOWABLE WAS NOT ATTAINED.
(**) INDICATES NO DEVICE AVAILABLE TO CONTROL THE SOURCE
(G) INDICATES GAS COOLING WAS REQUIRED PRIOR TO DEVICE APPLICATION.

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS DECEMBER 31, 1970

JURISDICTION SUMMARY

STATE B JURISDICTION

REGULATION TYPE AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EMISSIONS FOR POINT SOURCES (TONS/DAY) EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
FUEL COMBUSTION 24	5	5 *	135.35	407.39	249.33	2.712	29.80
INDUSTRIAL PROCESS 18	3	1 * **	6.95	20.25	15.28	0.104	18.70
SOLID WASTE DISPOSAL 18	2	0	0.65	0.15	0.0	0.0	0.0
JURISDICTION TOTAL	10	6	142.95	427.79	264.61	2.816	29.15

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

JURISDICTION EMISSIONS

EXISTING EMISSIONS (TONS/DAY)
POINT SOURCES.... 427.8
AREA SOURCES..... 15.9
TOTAL EMISSIONS.. 443.7
CONTROLLED REDUCTION.. 269.9

CONTROLLED EMISSIONS (TONS/DAY)
POINT SOURCES.... 163.2
AREA SOURCES..... 10.6
TOTAL EMISSIONS.. 173.8
PERCENTAGE REDUCTION... 60.8 %

JURISDICTION FUEL USE

COAL (TONS/DAY)..... 6088.773
RESID. OIL (GAL/DAY)..... 0.0
DIST. OIL (GAL/DAY)..... 31800.008
GAS (1000 CU. FT./DAY)... 6339999.000

JURISDICTION CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 29.15 DOLLARS/TON

Figure 2-15. (Continued)

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
1	10.00	5.00	0.145025E 02	0.886463E 00	0.0
2	10.00	20.00	0.146622E 02	0.131554E 01	0.0
3	10.00	35.00	0.147739E 02	0.158713E 01	0.0
4	10.00	50.00	0.148604E 02	0.162008E 01	0.0
5	10.00	65.00	0.149362E 02	0.142029E 01	0.0
6	25.00	5.00	0.147631E 02	0.153965E 01	0.0
7	25.00	20.00	0.150733E 02	0.242815E 01	0.0
8	25.00	35.00	0.151705E 02	0.283989E 01	0.0
9	25.00	50.00	0.152630E 02	0.263238E 01	0.0
10	25.00	65.00	0.154610E 02	0.212497E 01	0.0
11	40.00	5.00	0.152474E 02	0.277745E 01	0.0
12	40.00	20.00	0.157553E 02	0.443604E 01	0.0
13	40.00	35.00	0.158107E 02	0.521974E 01	0.0
14	40.00	50.00	0.160806E 02	0.421756E 01	0.0
15	40.00	65.00	0.165038E 02	0.319500E 01	0.0
16	55.00	5.00	0.167436E 02	0.609735E 01	0.0
17	55.00	20.00	0.172952E 02	0.877386E 01	0.0
18	55.00	35.00	0.169260E 02	0.115168E 02	0.0
19	55.00	50.00	0.173274E 02	0.594328E 01	0.0
20	55.00	65.00	0.187241E 02	0.469839E 01	0.0
21	70.00	5.00	0.271270E 02	0.319033E 02	0.0
22	70.00	20.00	0.200081E 02	0.333391E 02	0.0
23	70.00	35.00	0.187702E 02	0.202411E 02	0.0
24	70.00	50.00	0.203949E 02	0.824827E 01	0.0
25	70.00	65.00	0.237707E 02	0.881851E 01	0.0
26	85.00	5.00	0.200717E 02	0.142645E 02	0.0
27	85.00	20.00	0.178772E 02	0.110691E 02	0.0
28	85.00	35.00	0.194177E 02	0.671919E 01	0.0
29	85.00	50.00	0.251067E 02	0.110281E 02	0.0
30	85.00	65.00	0.260299E 02	0.200794E 02	0.0
31	100.00	5.00	0.162652E 02	0.467870E 01	0.0
32	100.00	20.00	0.160708E 02	0.372390E 01	0.0
33	100.00	35.00	0.168493E 02	0.321775E 01	0.0
34	100.00	50.00	0.182122E 02	0.384141E 01	0.0
35	100.00	65.00	0.178233E 02	0.310840E 01	0.0
36	115.00	5.00	0.152604E 02	0.224501E 01	0.0
37	115.00	20.00	0.152806E 02	0.194757E 01	0.0
38	115.00	35.00	0.155728E 02	0.172461E 01	0.0
39	115.00	50.00	0.158151E 02	0.163467E 01	0.0
40	115.00	65.00	0.156054E 02	0.120281E 01	0.0
41	130.00	5.00	0.148044E 02	0.122371E 01	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 — SULFUR LIMIT & EXHAUST CONC. STDS DECEMBER 31, 1970

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
42	130.00	20.00	0.148551E 02	0.113239E 01	0.0
43	130.00	35.00	0.149278E 02	0.100868E 01	0.0
44	130.00	50.00	0.149514E 02	0.825088E 00	0.0
45	130.00	65.00	0.148940E 02	0.689538E 00	0.0
46	145.00	5.00	0.145363E 02	0.698304E 00	0.0
47	145.00	20.00	0.145661E 02	0.659747E 00	0.0
48	145.00	35.00	0.145908E 02	0.583849E 00	0.0
49	145.00	50.00	0.145783E 02	0.489029E 00	0.0
50	145.00	65.00	0.145116E 02	0.367249E 00	0.0
51	55.00	15.00	0.174856E 02	0.850517E 01	0.0
52	75.00	30.00	0.188452E 02	0.122261E 02	0.0
53	77.50	57.50	0.397273E 02	0.254045E 02	0.472734E 01
54	75.00	60.00	0.297489E 02	0.150594E 02	0.0
55	82.50	60.00	0.258873E 02	0.119267E 02	0.0
56	90.00	60.00	0.238242E 02	0.153914E 02	0.0
57	95.00	57.50	0.200850E 02	0.619509E 01	0.0
58	65.00	70.00	0.207572E 02	0.614241E 01	0.0
59	75.00	75.00	0.221005E 02	0.660616E 01	0.0
60	95.00	82.50	0.166385E 02	0.205635E 01	0.0
61	10.00	80.00	0.149670E 02	0.119353E 01	0.0
62	10.00	95.00	0.149233E 02	0.970744E 00	0.0
63	10.00	110.00	0.148441E 02	0.772848E 00	0.0
64	25.00	80.00	0.154522E 02	0.166090E 01	0.0
65	25.00	95.00	0.152865E 02	0.125734E 01	0.0
66	25.00	110.00	0.151697E 02	0.956864E 00	0.0
67	40.00	80.00	0.163081E 02	0.235410E 01	0.0
68	40.00	95.00	0.157838E 02	0.153664E 01	0.0
69	40.00	110.00	0.156641E 02	0.121386E 01	0.0
70	55.00	80.00	0.176195E 02	0.327070E 01	0.0
71	55.00	95.00	0.165384E 02	0.203657E 01	0.0
72	55.00	110.00	0.166226E 02	0.179139E 01	0.0
73	70.00	80.00	0.196174E 02	0.450441E 01	0.0
74	70.00	95.00	0.168141E 02	0.222109E 01	0.0
75	70.00	110.00	0.167298E 02	0.184553E 01	0.0
76	85.00	80.00	0.204992E 02	0.448613E 01	0.0
77	85.00	95.00	0.166676E 02	0.202597E 01	0.0
78	85.00	110.00	0.151230E 02	0.983727E 00	0.0
79	100.00	80.00	0.160617E 02	0.159603E 01	0.0
80	100.00	95.00	0.154348E 02	0.111363E 01	0.0
81	100.00	110.00	0.147813E 02	0.664067E 00	0.0
82	115.00	80.00	0.150806E 02	0.770669E 00	0.0

Figure 2-15. (Continued)

CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIONS

AIR QUALITY STANDARD 35.0 MICROGRAMS/CUBIC METER SULFUR DIOXIDE
UTM ORIGIN(KILOMETERS): X= 0.0 Y= 0.0

RECEPTOR NUMBER	LOCATIONS UTM,KILOMETERS X	Y	NEW CONCENTRATION VALUE MICROGRAMS/CUBIC METER	AMOUNT REDUCED MICROGRAMS/CUBIC METER	AMOUNT IN EXCESS MICROGRAMS/CUBIC METER
83	115.00	95.00	0.147568E 02	0.588402E 00	0.0
84	115.00	110.00	0.145203E 02	0.407210E 00	0.0
85	130.00	80.00	0.151129E 02	0.869916E 00	0.0
86	130.00	95.00	0.145252E 02	0.392030E 00	0.0
87	130.00	110.00	0.143612E 02	0.246779E 00	0.0
88	145.00	80.00	0.144251E 02	0.278330E 00	0.0
89	145.00	95.00	0.143215E 02	0.178273E 00	0.0
90	145.00	110.00	0.142567E 02	0.137413E 00	0.0
91	79.20	63.50	0.268284E 02	0.125946E 02	0.0
92	65.00	56.30	0.211660E 02	0.755683E 01	0.0
93	83.90	71.00	0.245261E 02	0.999976E 01	0.0
94	89.60	68.90	0.310016E 02	0.222336E 02	0.0
95	90.30	72.60	0.220595E 02	0.708125E 01	0.0
96	81.90	96.50	0.164736E 02	0.193171E 01	0.0
97	126.80	85.20	0.150634E 02	0.782893E 00	0.0
98	75.00	17.10	0.215184E 02	0.321715E 02	0.0
99	82.10	54.90	0.442564E 02	0.308510E 02	0.9256395 01
100	60.00	71.10	0.193112E 02	0.500257E 01	0.0
101	88.50	74.60	0.248071E 02	0.112521E 02	0.0
102	91.50	90.00	0.166633E 02	0.200022E 01	0.0
103	90.00	65.30	0.240178E 02	0.105953E 02	0.0
104	75.20	53.50	0.243127E 02	0.102057E 02	0.0
105	70.50	23.00	0.199318E 02	0.368672E 02	0.0
106	71.20	9.50	0.281299E 02	0.379707E 02	0.0

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

JURISDICTION AND NUMBER	TOTAL APPLICABLE POINT SOURCES	TOTAL CONTROLLED POINT SOURCES	EMISSIONS FOR POINT SOURCES (TONS/DAY) ALLOWED	EXISTING	CONTROLLED EMISSION REDUCTION (TONS/DAY)	ANNUAL CONTROL COST (MILLIONS OF $)	CONTROL COST PER TON REMOVED ($/TON)
					309.92	4.705	41.59
STATE A 1	7	5 * **	171.27	467.86	[redacted]	[redacted]	[redacted]
STATE B 2	10	6 * **	142.95	427.79	264.61	2.816	29.15
STRATEGY TOTAL	17	11	314.21	895.65	574.54	7.521	35.86

(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSION
(**) NO DEVICE AVAILABLE TO CONTROL SOME SOURCES.
(G) GAS COOLING APPLIED TO SOME SOURCE(S).

Figure 2-15. (Continued)

CENTRAL CITY STRATEGY IV SO2 - SULFUR LIMIT & EXHAUST CONC. STDS — DECEMBER 31, 1970

CONTROL STRATEGY SUMMARY

REGIONAL EMISSIONS

EXISTING EMISSIONS (TONS/DAY)		CONTROLLED EMISSIONS (TONS/DAY)	
POINT SOURCES....	895.7	POINT SOURCES....	321.1
AREA SOURCES.....	76.6	AREA SOURCES.....	53.2
TOTAL EMISSIONS..	972.3	TOTAL EMISSIONS..	374.3
CONTROLLED REDUCTION..	598.0	PERCENTAGE REDUCTION...	61.5 %

REGIONAL FUEL USE

COAL (TONS/DAY).....	9258.516
RESID. OIL (GAL/DAY).....	2552.998
DIST. OIL (GAL/DAY).....	31800.008
GAS (1000 CU. FT./DAY)...	6347999.000

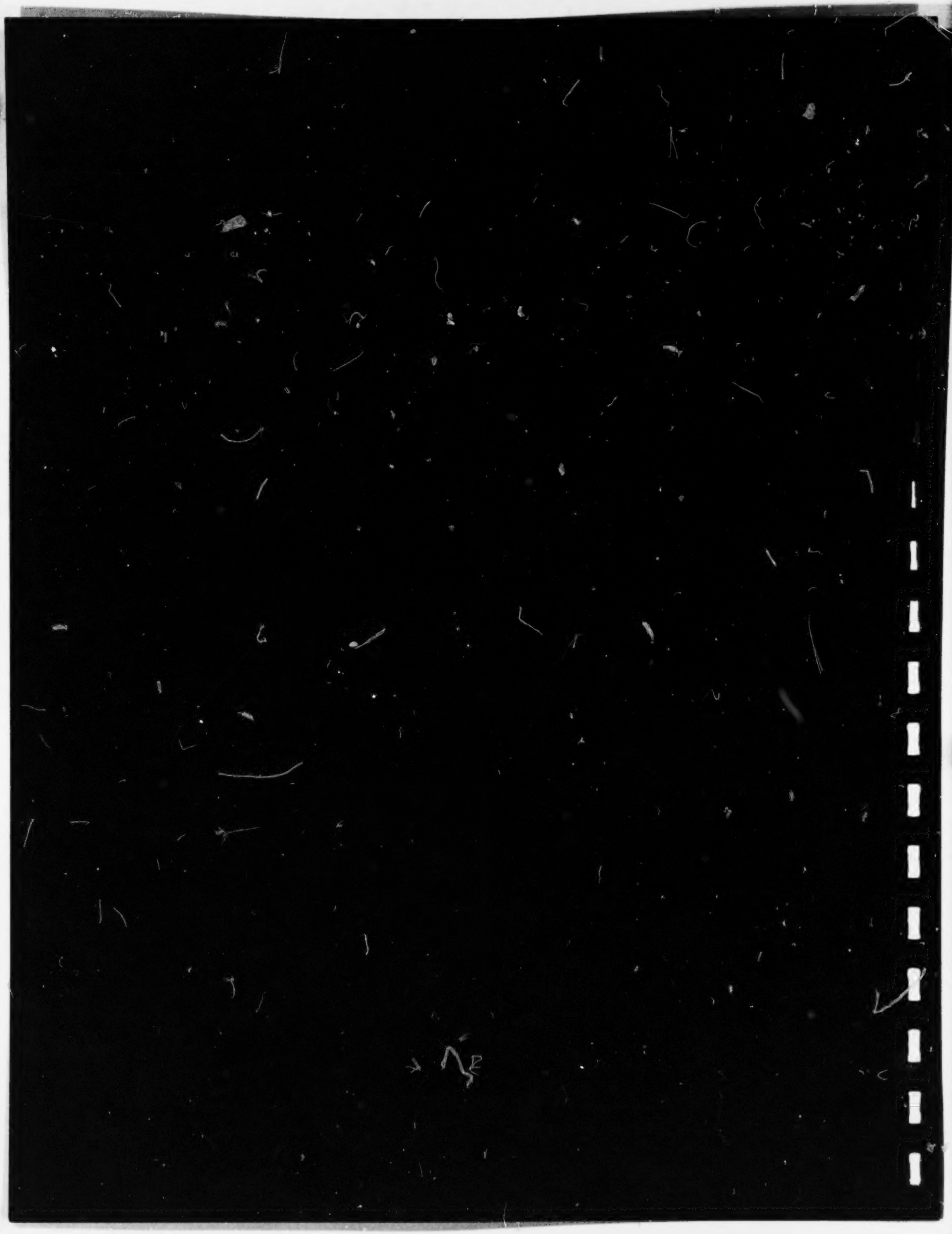
200

REGIONAL CONTROL COST-EFFECTIVENESS

REDUCTION IN TOTAL POINT SOURCE EMISSION RATE . . . . . 35.86 DOLLARS/TON

REDUCTION IN GROUND LEVEL CONCENTRATION . . . 1195429. DOLLARS/MICROGRAM/CUBIC METER

Figure 2-15. (Continued)



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PROGRAM NAME SOURCE

PURPOSE

To provide the Implementation Planning Program's Information System with a Source Data Management System. The capabilities of the Source Program DMS include: create, update, and list.

COMPUTER/LANGUAGE

IBM 360-COBOL(F) - OS Version 18

INPUT

TRANS - This is the source transaction file. This is a sequential disk file with sorted card images as records. Contains an action card, point source, and area source transactions.

OLD - This is the source input file, or old source file. It is a sequential disk file. Contains a date record (first record on file), point source, dummy record, and area sources.

OUTPUT

NEW - This is the source output file, or new source file. It is a sequential disk file. Contains same record types as OLD.

ERROR - This file is a unit record device where the error messages and the source file are listed. This is usually the system output unit.

PROCEDURE

CREATE-FILE: This is the location the program will branch to when the "Create" feature is used. All fields are edited and, if necessary, converted. Any errors will prevent the creation of that record on the new source file. All errors are recorded on the error file. Cards one and three must be present or the record is rejected.

UPDATE-FILE: This is the location the program will branch to when the "Update" feature is used. Permissible update functions are add, change, and delete. For add and change functions, all fields are edited. If errors are found during an add, the record is not added to the file. If an error is found during a change, only the card containing the error is rejected. Other change cards for the same record (if correct) will be incorporated. Delete functions remove the entire source record from the file.

LIST-FILE: This is the location the program will branch to when the "List" feature is used. This portion of the program will print a formatted listing of the source file data in the order that is on the file.

INPUT/OUTPUT VARIABLES

- Input - The input variables are listed in Volume I, Section 7.2, Tables 7.2-1 Tables 7.2-1 and 7.2-2.

- Output

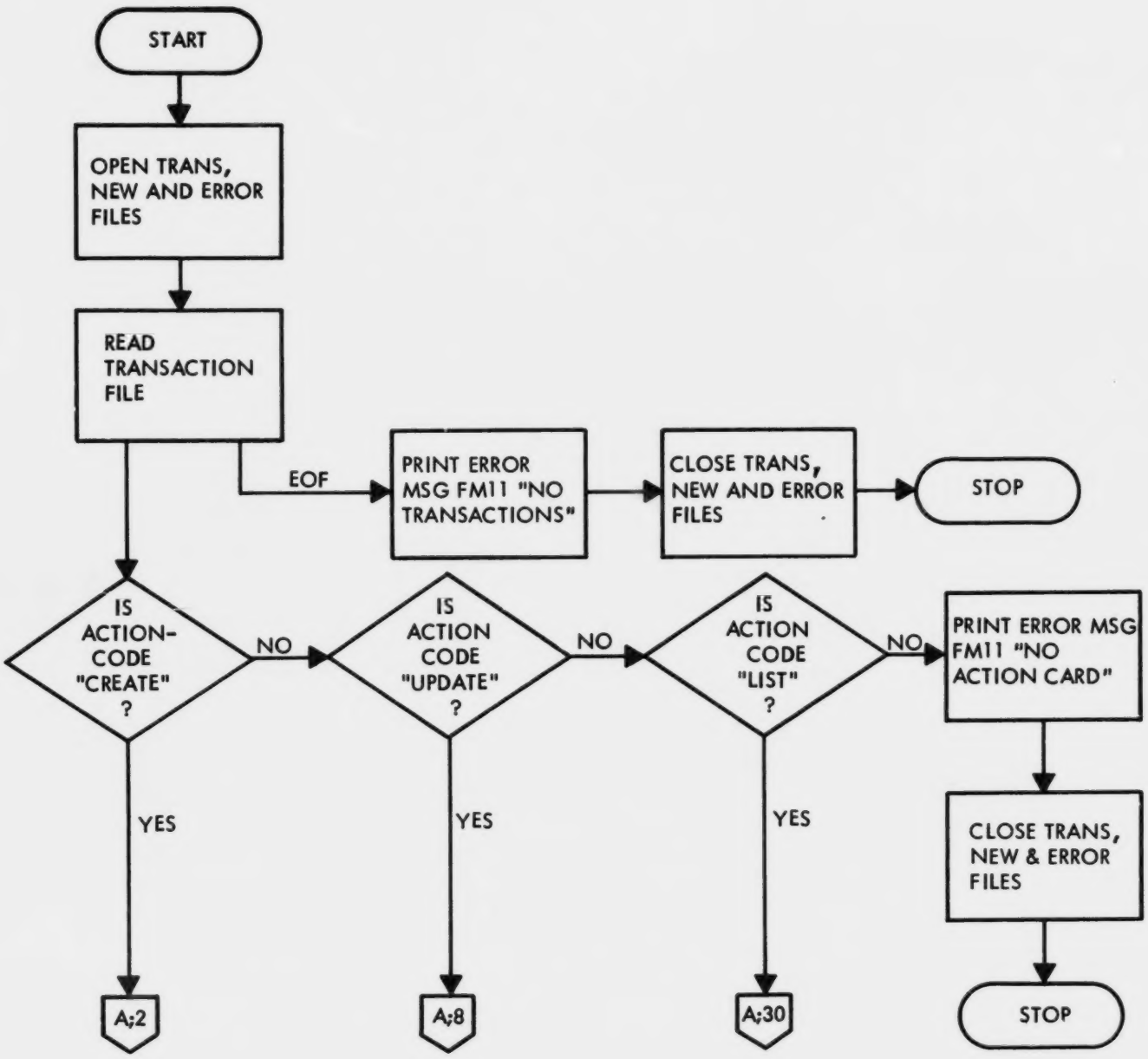
DATE RECORD

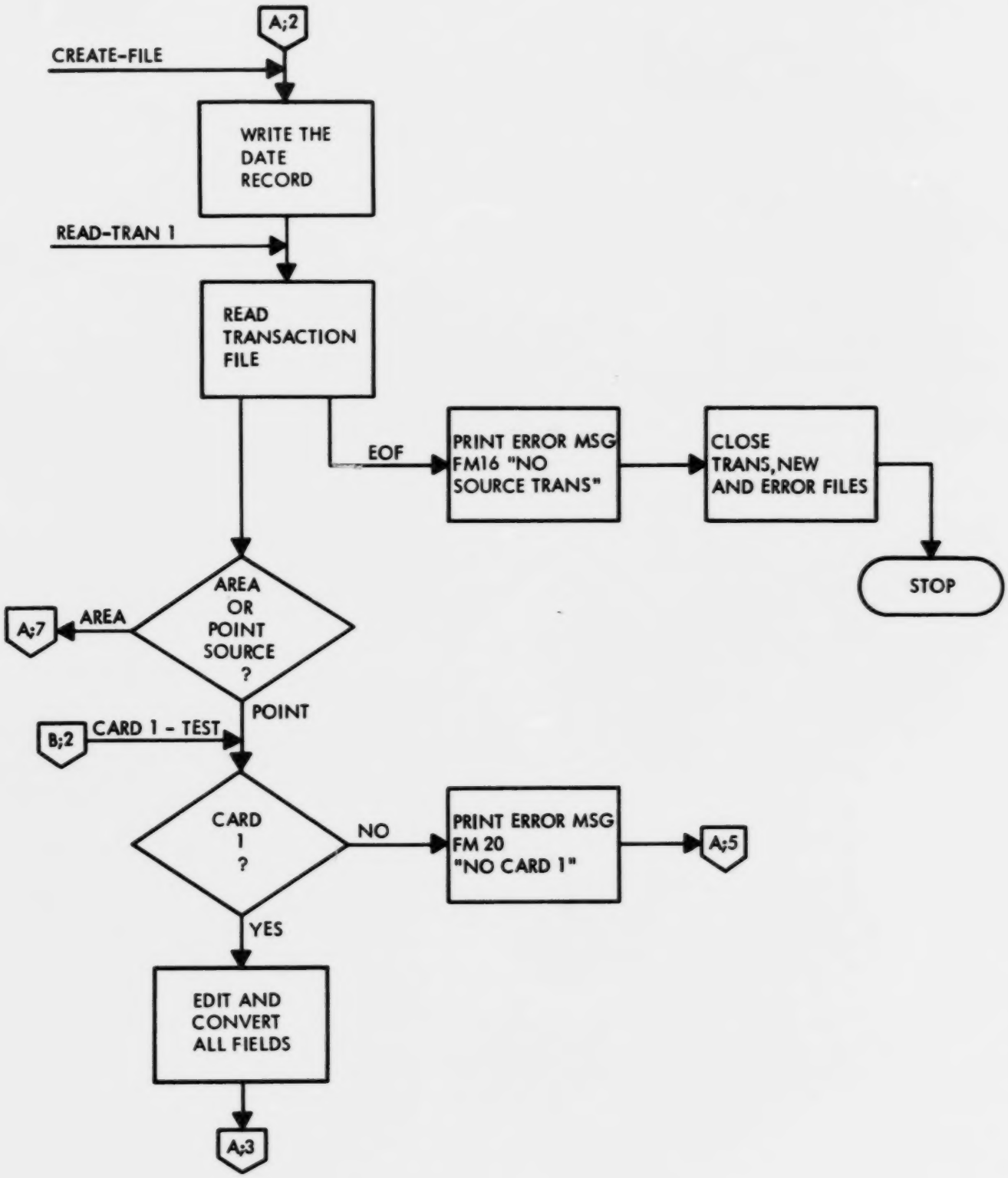
POSITION	FORMAT	DESCRIPTION
1-12	X(12)	"CREATE_DATE_"
13-30	X(18)	Date of Create
31-42	X(12)	"UPDATE_DATE_"
43-60	X(18)	Date of Update
61-68	X(7)	"_REGIØN_"
69-71	XXX	Region Number
72-80	Blank	

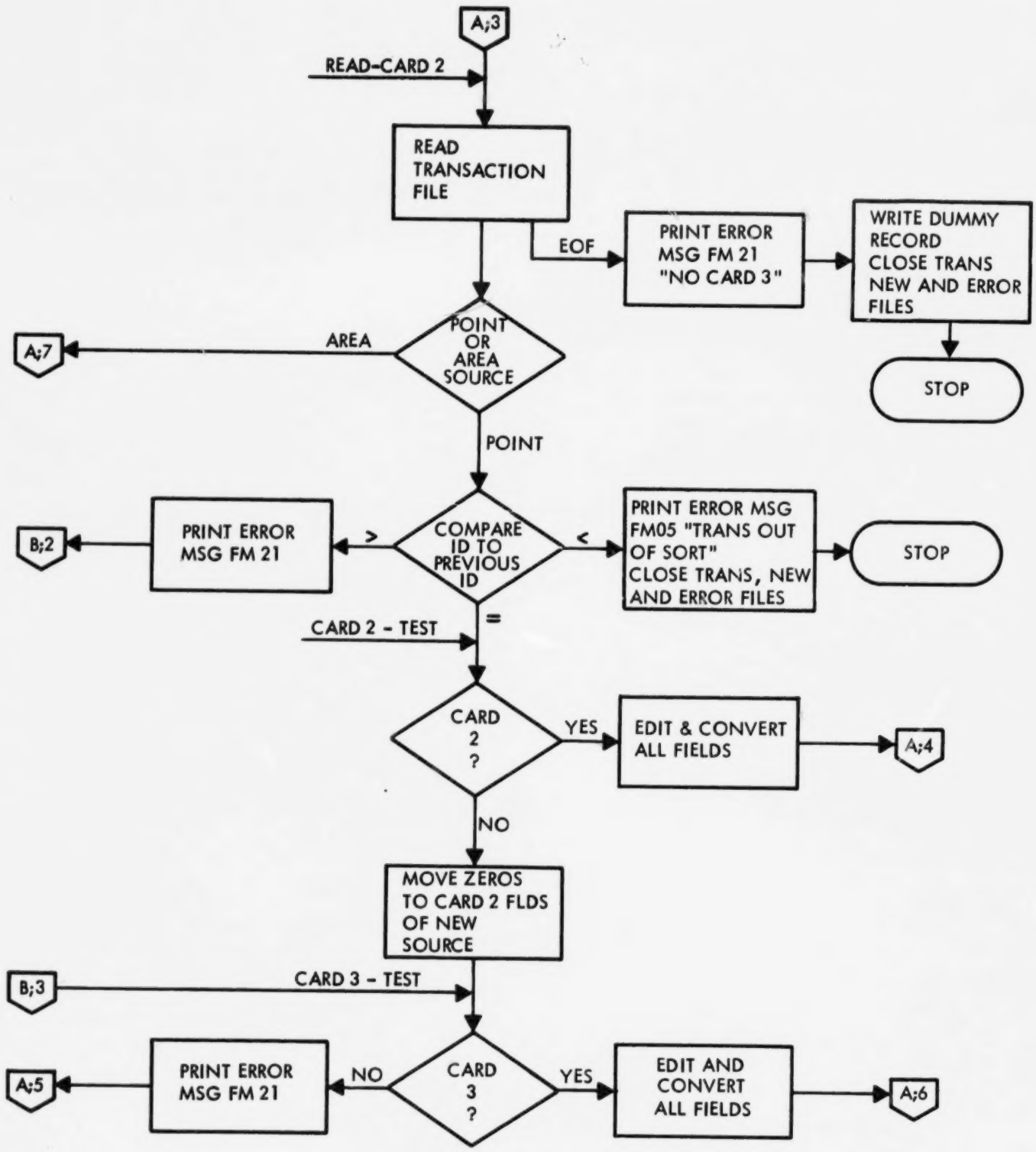
POINT SOURCE RECORD

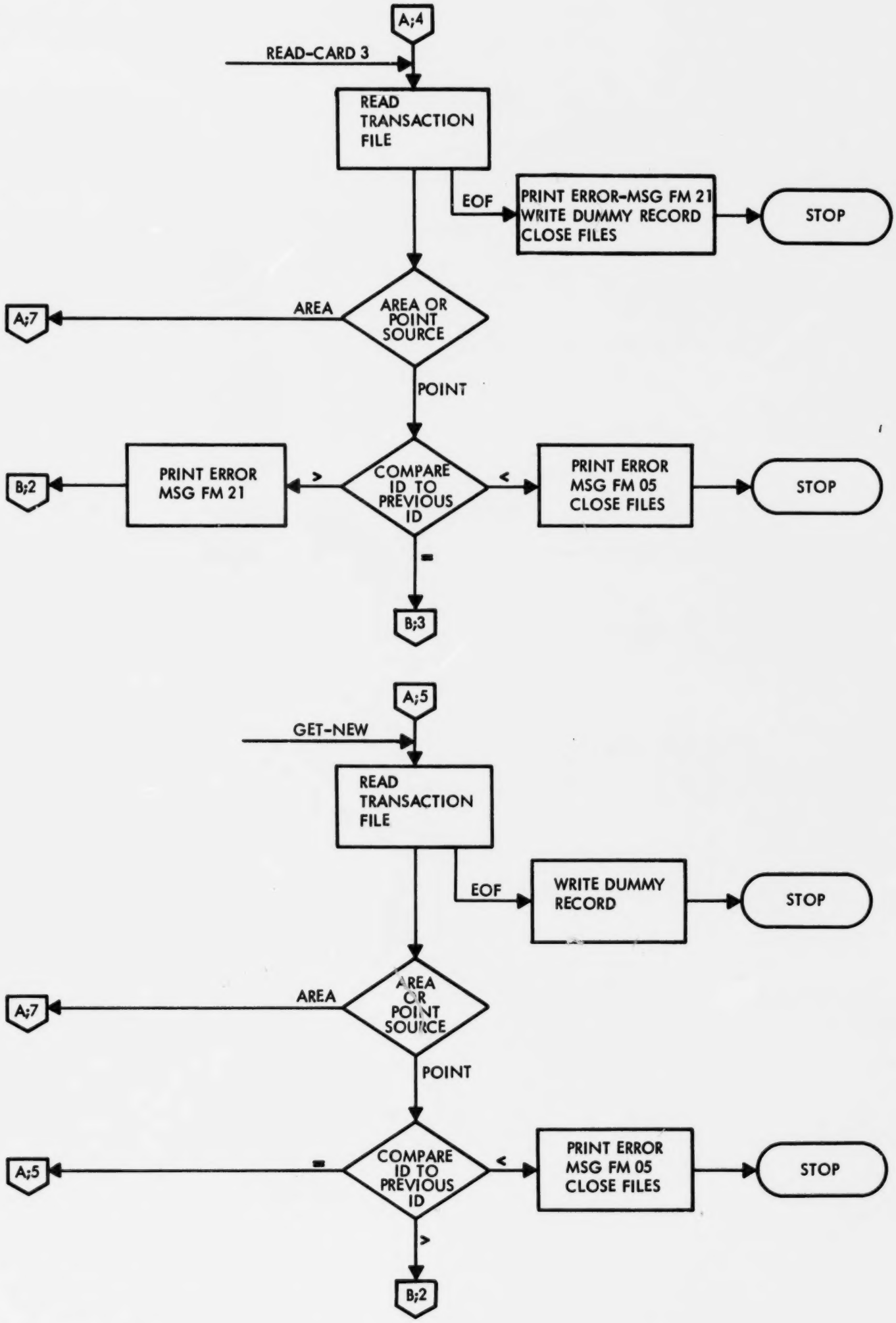
1-3	XXX	Region Number
4-7	XXXX	SIC Code
8-10	XXX	Site Number
11-12	XX	Process Code
13-35	X(23)	Descriptive Name
36-69	999V9	Location X Kilometers
40-44	9999V9	Location Y Kilometers
45-46	XX	Political Jurisdiction Code
47	A	Ownership Code P,L,S,F,U
48	A	Source Type B,P,S
49-55	9(4)V999	SO_2 Emission Rate, tons/day
56-62	9(4)V999	Particulate Emission Rate, tons/day
63-66	9999	Operating Time, hours/year
67-68	9V9	Shifts/Day
69-71	99V9	SO_2 Control Efficiency (Existing), %
72-75	99V99	Part. Control Efficiency (Existing), %
76-78	XXX	Control Device ID (Existing)
79-90	+9.9(5)E+99	Rated Capacity, btu/hour
91-100	+9.999E+99	Coal Heat Content, btu/ton
101-111	+9.9(4)E+99	Residual Oil Heat Content, btu/gal
112-122	+9.9(4)E+99	Distillate Oil Heat Content, btu/gal
123-126	9999	Gas Heat Content, btu/cu.ft.
127-131	9(5)	Coal Burned, tons/day
132-137	9(6)	Residual Oil Heat Burned, gals/day
138-143	9(6)	Distillate Oil Burned, gals/day
144-151	9(5)000	Gas Burned, cu.ft./day
152-154	9V99	Coal Sulfur Content, %
155-157	9V99	Residual Oil Sulfur Content, %
158-160	9V99	Distillate Oil Sulfur Content, %
161-165	9V9999	Gas Sulfur Content, %
166-168	99V9	Coal Ash Content, %
169-175	9999V9(3)	Stack Height, meters
176-182	9999V9(3)	Stack Temperature, degrees kelvin
183-189	9999V9(3)	Normalized Plume Rise, $meters^2/sec.$
190-197	9(8)	Maximum Process rate, lb/hour

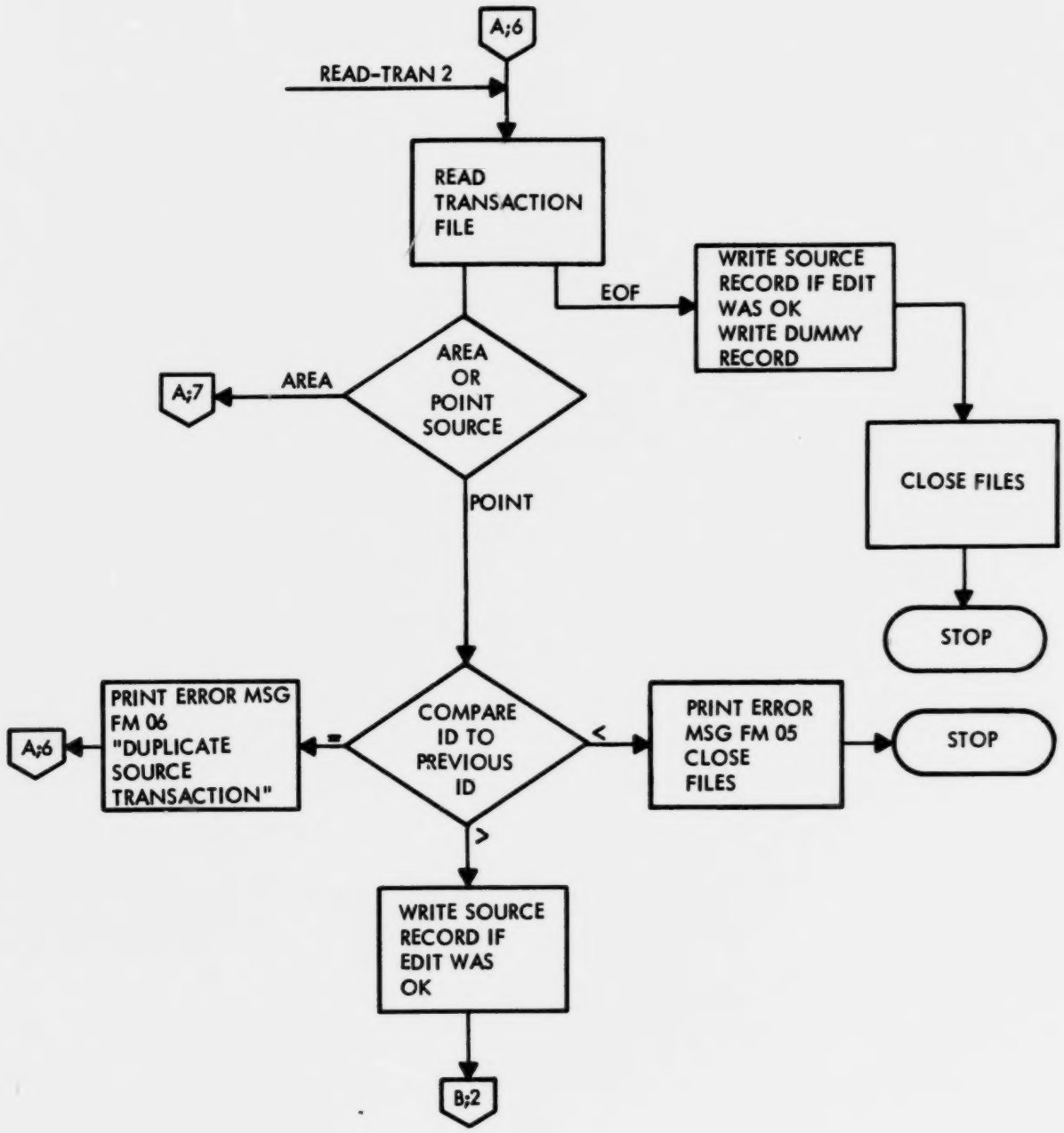
198-204	9(5)00	Maximum Exhaust Gas Volume, ACFM
205-211	99V9(5)	Stack Diameter, meters
212-218	999V9(4)	Stack Velocity, meters/sec.
219-221	9V99	Use FActor
DUMMY RECORD		
1-3	XXX	Region Number
4-7	XXXX	"9999"
8-10	XXX	"000"
11-12	XX	"00"
12-331	Blank	
AREA SOURCE RECORD		
1-3	XXX	Region Number
4-7	XXXX	SIC Code
8-10	XXX	Site Number
11-12	XX	Process Code
13-16	999V9	Location X, kilometers
17-21	9999V9	Location Y, kilometers
22-25	999V9	Area, square kilometers
26-27	XX	Political Jurisdiction Code
28-34	9999V9(3)	Effective Stack Height, meters
35-41	9(4)V999	SO_2 Emission Rate, tons/day
42-48	9(4)V999	Part. Emission Rate, tons/day

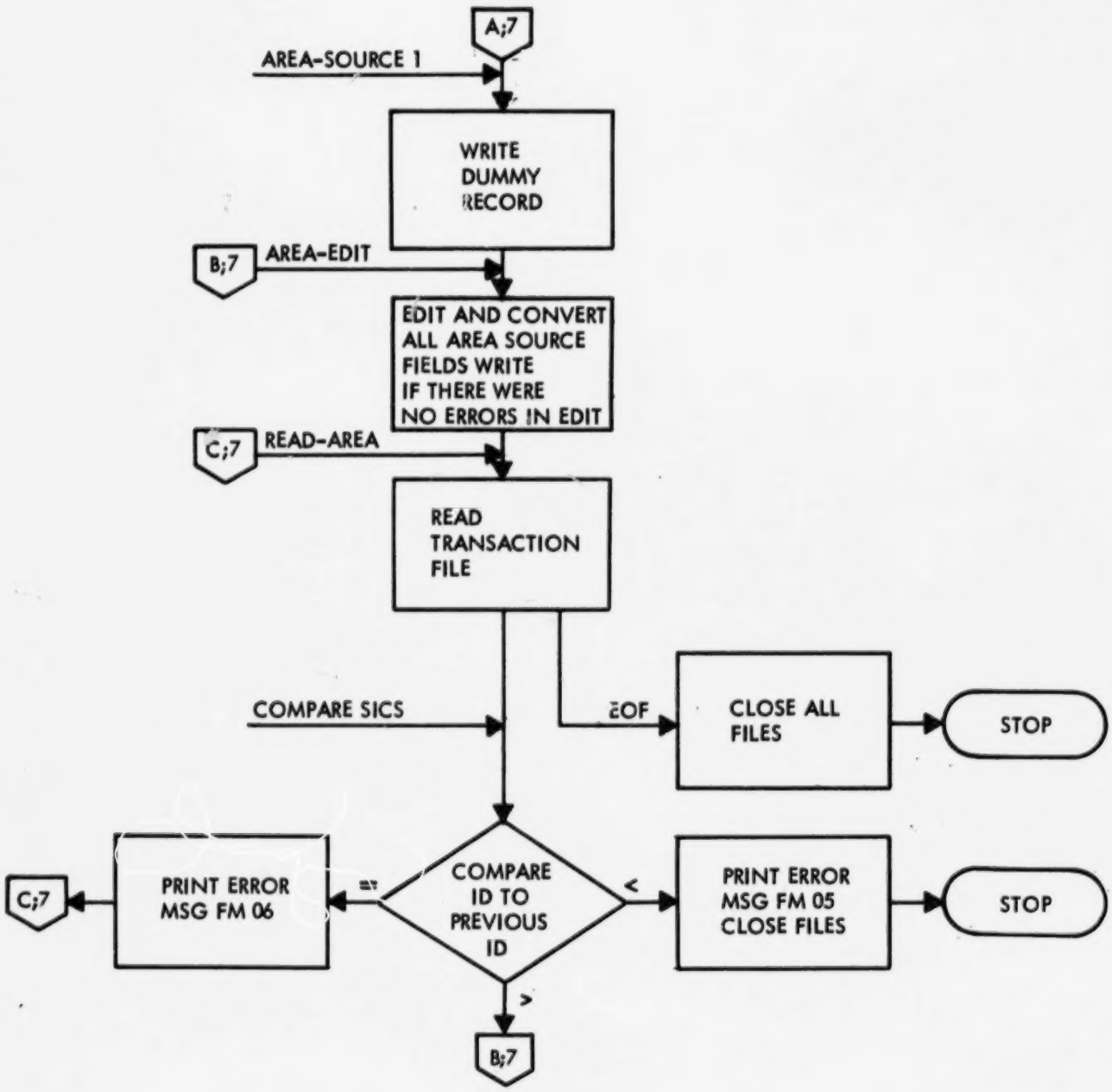

START
OPEN TRANS, NEW AND ERROR FILES
READ TRANSACTION FILE
EOF
PRINT ERROR MSG FM11 "NO TRANSACTIONS"
CLOSE TRANS, NEW AND ERROR FILES
STOP
IS ACTION-CODE "CREATE" ?
NO
IS ACTION CODE "UPDATE" ?
NO
IS ACTION CODE "LIST" ?
NO
PRINT ERROR MSG FM11 "NO ACTION CARD"
CLOSE TRANS, NEW & ERROR FILES
STOP
YES
YES
YES
A;2
A;8
A;30

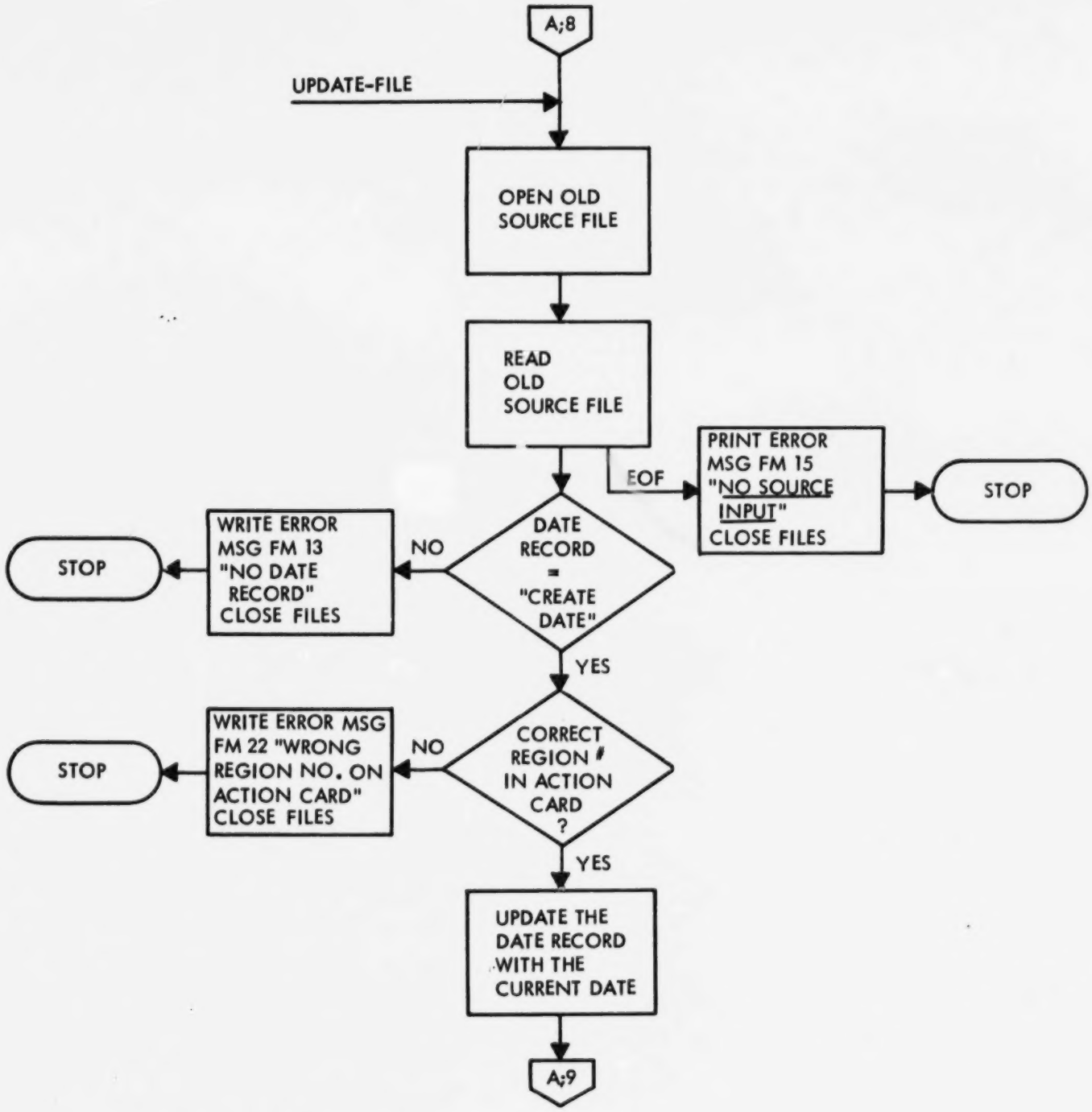

A;2
CREATE-FILE
WRITE THE DATE RECORD
READ-TRAN 1
READ TRANSACTION FILE
EOF
PRINT ERROR MSG FM16 "NO SOURCE TRANS"
CLOSE TRANS, NEW AND ERROR FILES
STOP
AREA OR POINT SOURCE ?
AREA
A;7
POINT
B;2
CARD 1 - TEST
CARD 1 ?
NO
PRINT ERROR MSG FM 20 "NO CARD 1"
A;5
YES
EDIT AND CONVERT ALL FIELDS
A;3

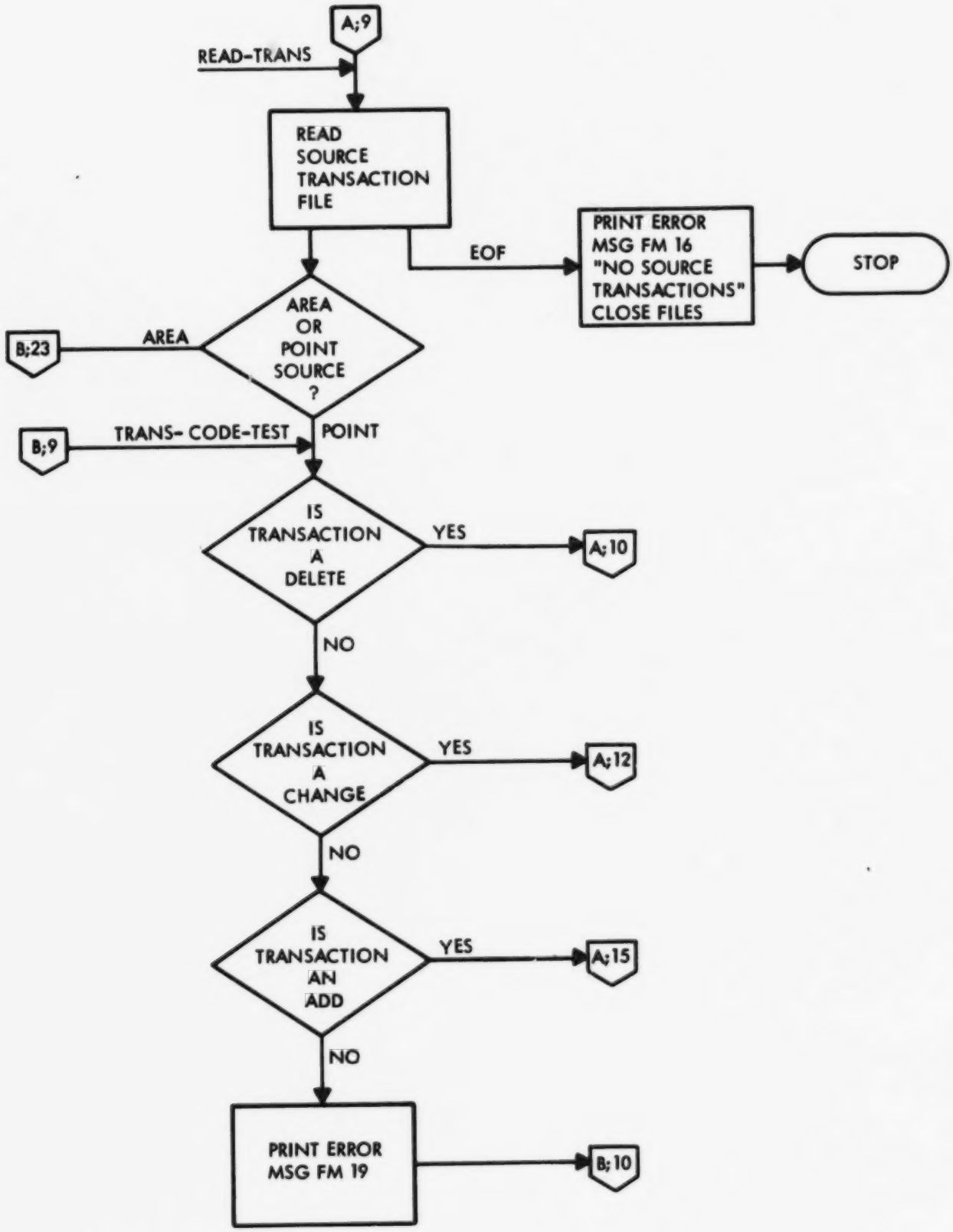

A;3
READ-CARD 2
READ TRANSACTION FILE
EOF
PRINT ERROR MSG FM 21 "NO CARD 3"
WRITE DUMMY RECORD CLOSE TRANS NEW AND ERROR FILES
STOP
POINT OR AREA SOURCE
AREA
A;7
POINT
COMPARE ID TO PREVIOUS ID
>
PRINT ERROR MSG FM 21
B;2
<
PRINT ERROR MSG FM05 "TRANS OUT OF SORT" CLOSE TRANS, NEW AND ERROR FILES
STOP
=
CARD 2 - TEST
CARD 2 ?
YES
EDIT & CONVERT ALL FIELDS
A;4
NO
MOVE ZEROS TO CARD 2 FLDS OF NEW SOURCE
B;3
CARD 3 - TEST
CARD 3 ?
NO
PRINT ERROR MSG FM 21
A;5
YES
EDIT AND CONVERT ALL FIELDS
A;6

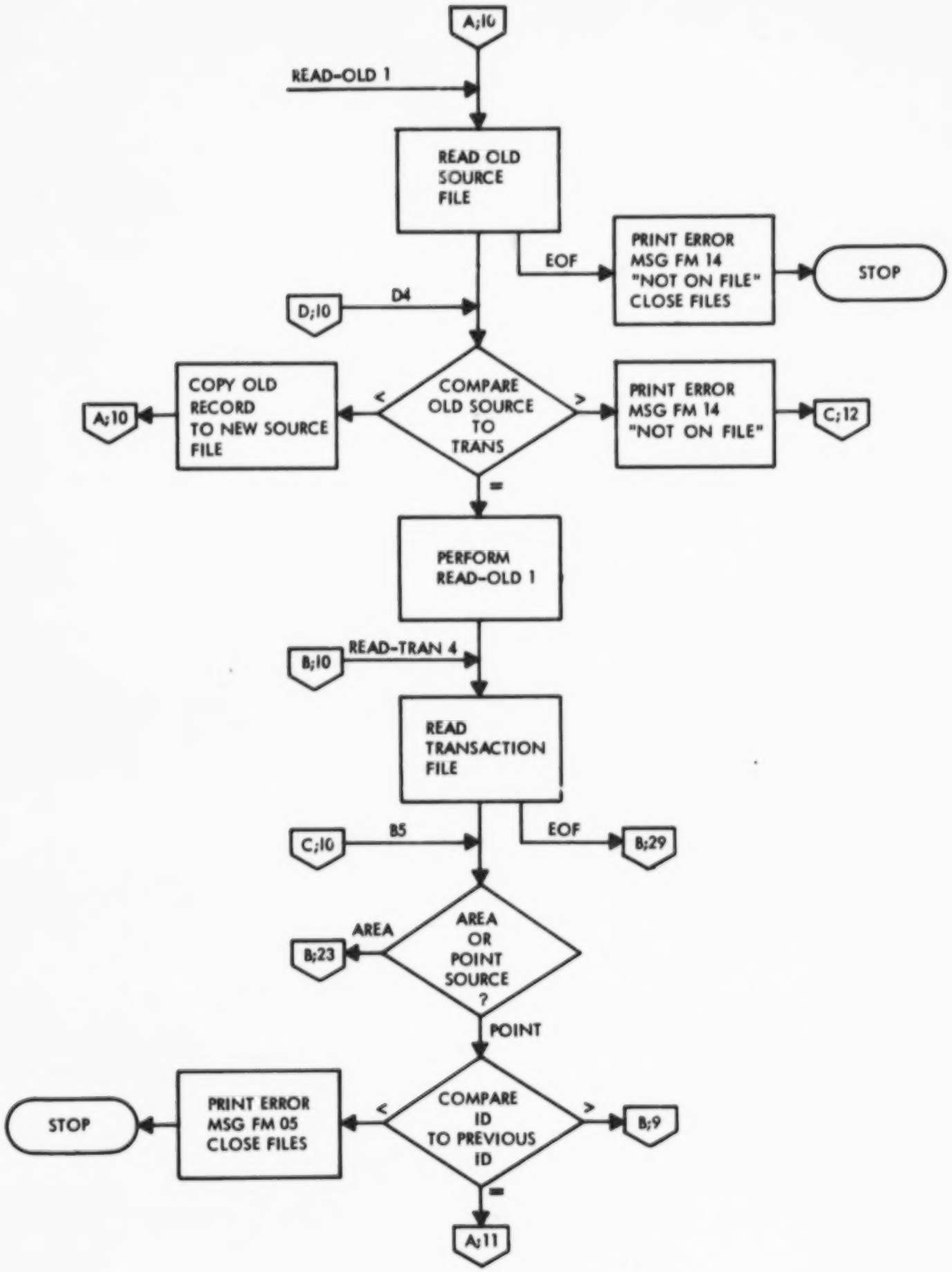

A;4
READ-CARD 3
READ TRANSACTION FILE
EOF
PRINT ERROR-MSG FM 21
WRITE DUMMY RECORD
CLOSE FILES
STOP
AREA OR POINT SOURCE
AREA
A;7
POINT
COMPARE ID TO PREVIOUS ID
>
PRINT ERROR MSG FM 21
B;2
<
PRINT ERROR MSG FM 05
CLOSE FILES
STOP
=
B;3
A;5
GET-NEW
READ TRANSACTION FILE
EOF
WRITE DUMMY RECORD
STOP
AREA OR POINT SOURCE
AREA
A;7
POINT
COMPARE ID TO PREVIOUS ID
=
A;5
<
PRINT ERROR MSG FM 05
CLOSE FILES
STOP
>
B;2

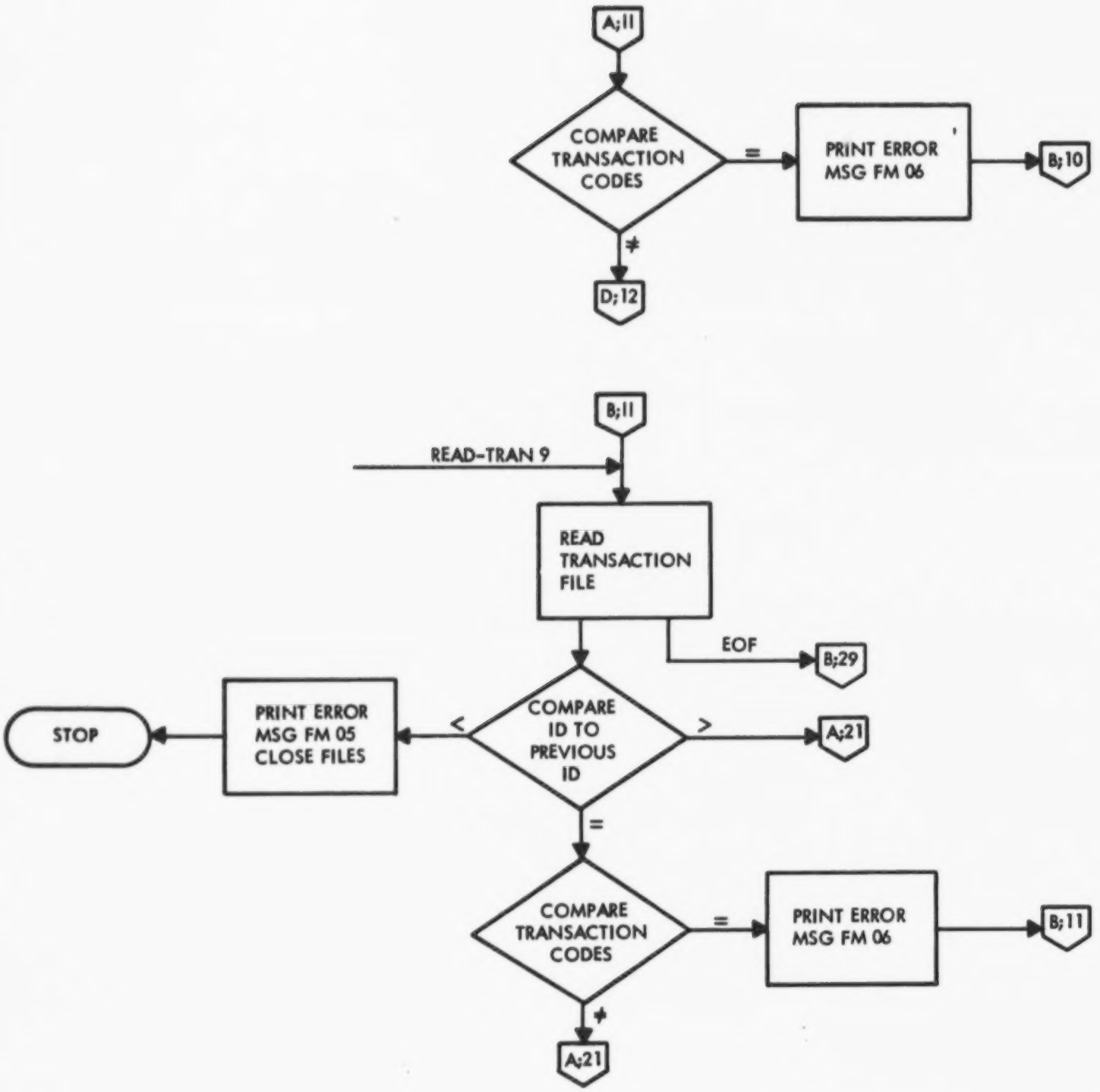

A;6
READ-TRAN 2
READ TRANSACTION FILE
EOF
WRITE SOURCE RECORD IF EDIT WAS OK WRITE DUMMY RECORD
CLOSE FILES
STOP
AREA OR POINT SOURCE
AREA
A;7
POINT
COMPARE ID TO PREVIOUS ID
=
PRINT ERROR MSG FM 06 "DUPLICATE SOURCE TRANSACTION"
A;6
<
PRINT ERROR MSG FM 05 CLOSE FILES
STOP
>
WRITE SOURCE RECORD IF EDIT WAS OK
B;2

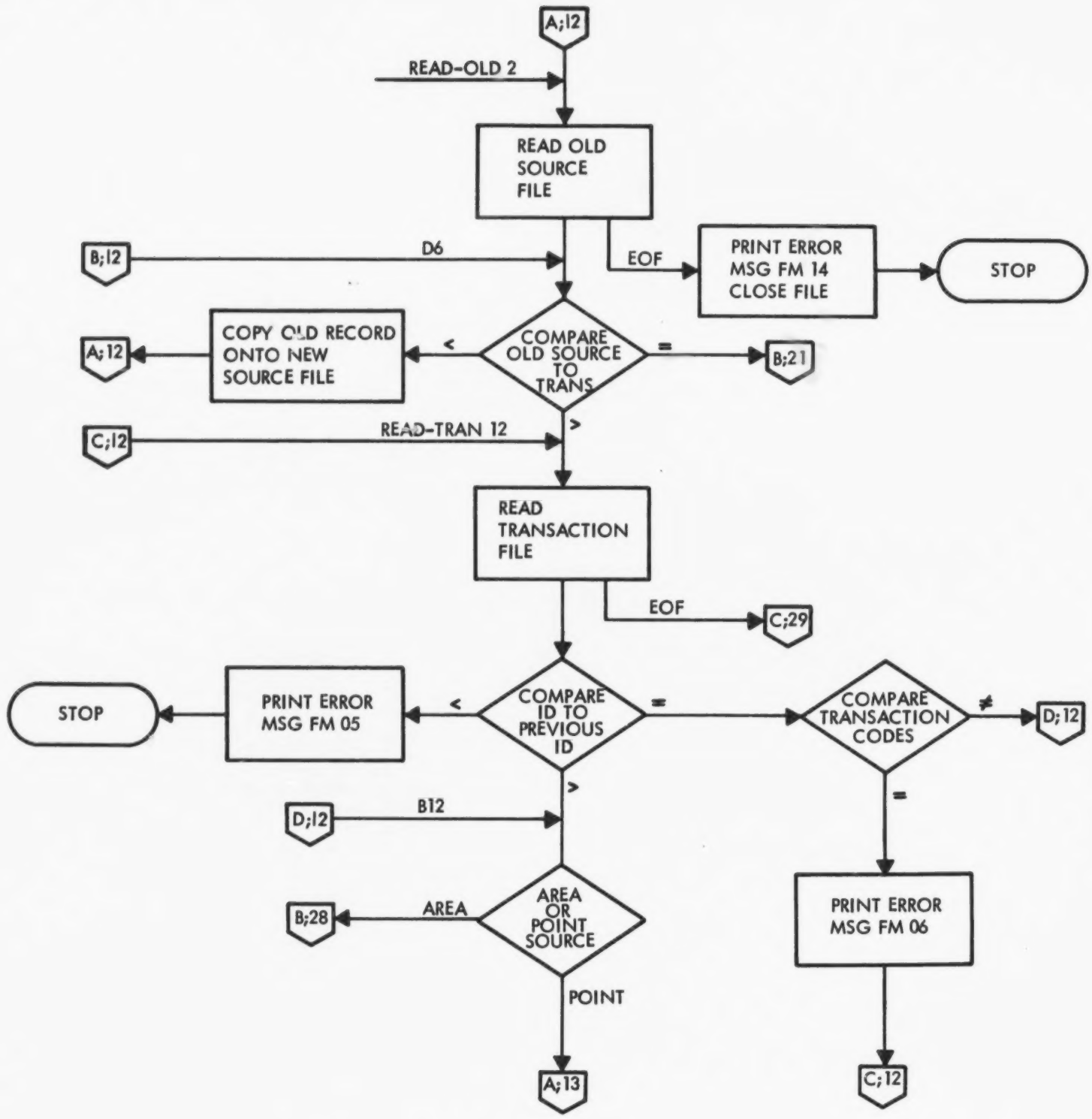

A;7
AREA-SOURCE 1
WRITE DUMMY RECORD
B;7
AREA-EDIT
EDIT AND CONVERT ALL AREA SOURCE FIELDS WRITE IF THERE WERE NO ERRORS IN EDIT
C;7
READ-AREA
READ TRANSACTION FILE
COMPARE SICS
EOF
CLOSE ALL FILES
STOP
COMPARE ID TO PREVIOUS ID
=
<
>
PRINT ERROR MSG FM 06
C;7
PRINT ERROR MSG FM 05 CLOSE FILES
STOP
B;7

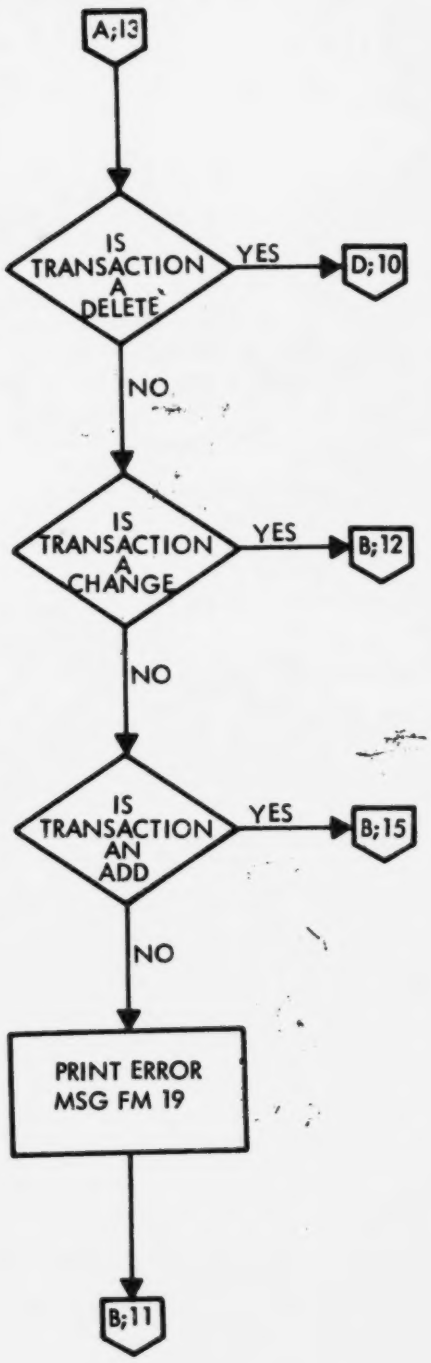

A;8
UPDATE-FILE
OPEN OLD SOURCE FILE
READ OLD SOURCE FILE
EOF
PRINT ERROR MSG FM 15 "NO SOURCE INPUT" CLOSE FILES
STOP
DATE RECORD = "CREATE DATE"
NO
WRITE ERROR MSG FM 13 "NO DATE RECORD" CLOSE FILES
STOP
YES
CORRECT REGION # IN ACTION CARD ?
NO
WRITE ERROR MSG FM 22 "WRONG REGION NO. ON ACTION CARD" CLOSE FILES
STOP
YES
UPDATE THE DATE RECORD WITH THE CURRENT DATE
A;9

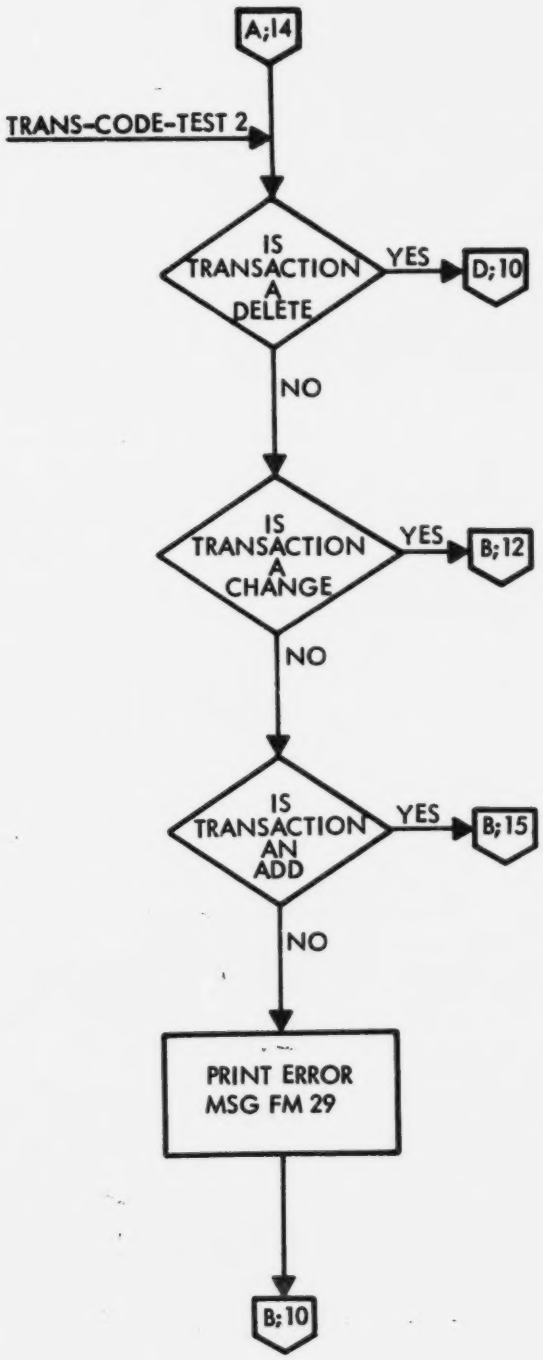

A;9
READ-TRANS
READ SOURCE TRANSACTION FILE
EOF
PRINT ERROR MSG FM 16 "NO SOURCE TRANSACTIONS" CLOSE FILES
STOP
AREA OR POINT SOURCE ?
AREA
B;23
TRANS- CODE-TEST
POINT
B;9
IS TRANSACTION A DELETE
YES
A;10
NO
IS TRANSACTION A CHANGE
YES
A;12
NO
IS TRANSACTION AN ADD
YES
A;15
NO
PRINT ERROR MSG FM 19
B;10

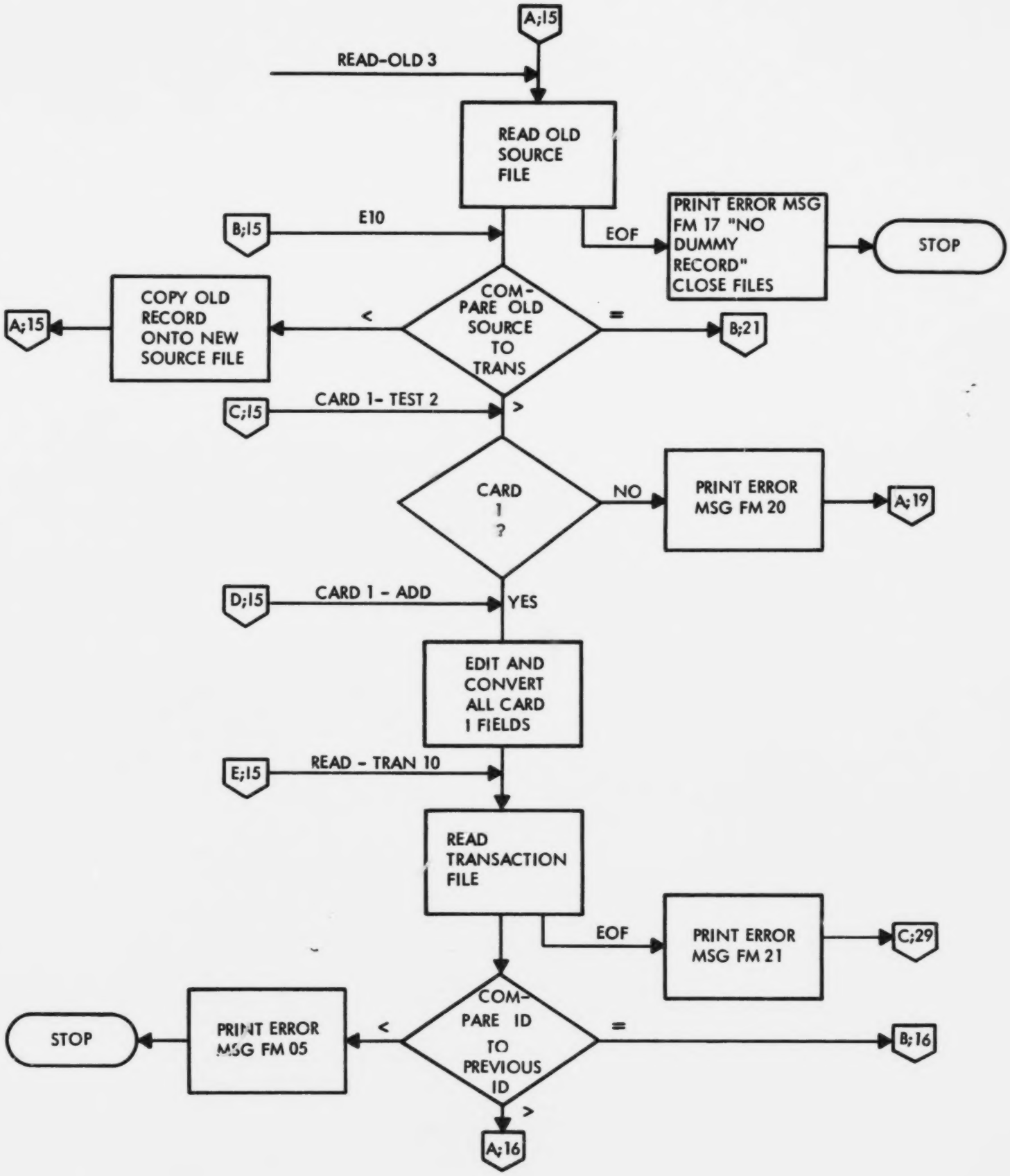

A;16
READ-OLD 1
READ OLD SOURCE FILE
EOF
PRINT ERROR MSG FM 14 "NOT ON FILE" CLOSE FILES
STOP
D;10
D4
COPY OLD RECORD TO NEW SOURCE FILE
A;10
<
COMPARE OLD SOURCE TO TRANS
>
PRINT ERROR MSG FM 14 "NOT ON FILE"
C;12
=
PERFORM READ-OLD 1
B;10
READ-TRAN 4
READ TRANSACTION FILE
C;10
B5
EOF
B;29
AREA
B;23
AREA OR POINT SOURCE ?
POINT
STOP
PRINT ERROR MSG FM 05 CLOSE FILES
<
COMPARE ID TO PREVIOUS ID
>
B;9
=
A;11

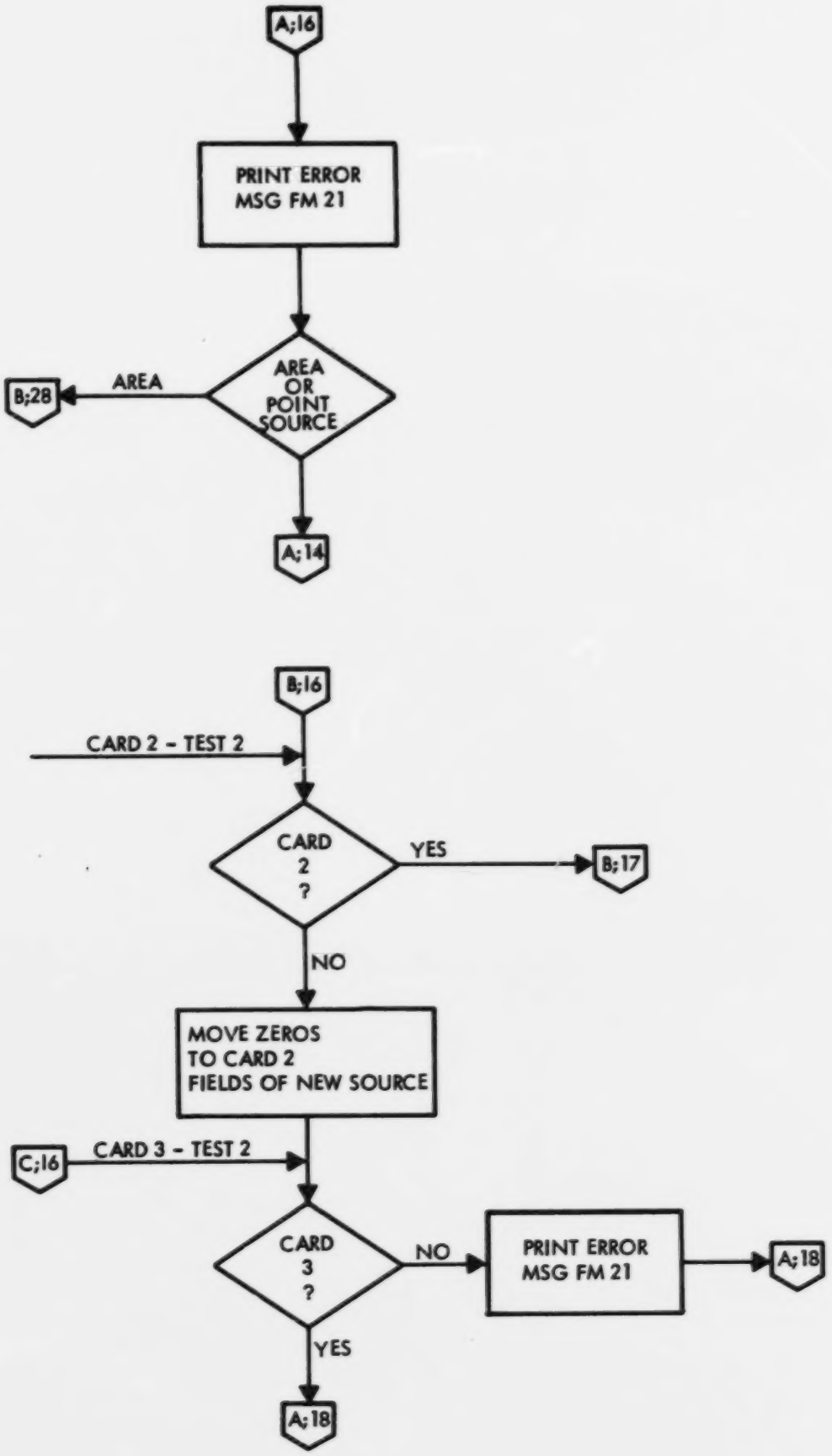

A;11
COMPARE TRANSACTION CODES
=
PRINT ERROR MSG FM 06
B;10
≠
D;12
B;11
READ-TRAN 9
READ TRANSACTION FILE
EOF
B;29
STOP
PRINT ERROR MSG FM 05 CLOSE FILES
<
COMPARE ID TO PREVIOUS ID
>
A;21
=
COMPARE TRANSACTION CODES
=
PRINT ERROR MSG FM 06
B;11
≠
A;21

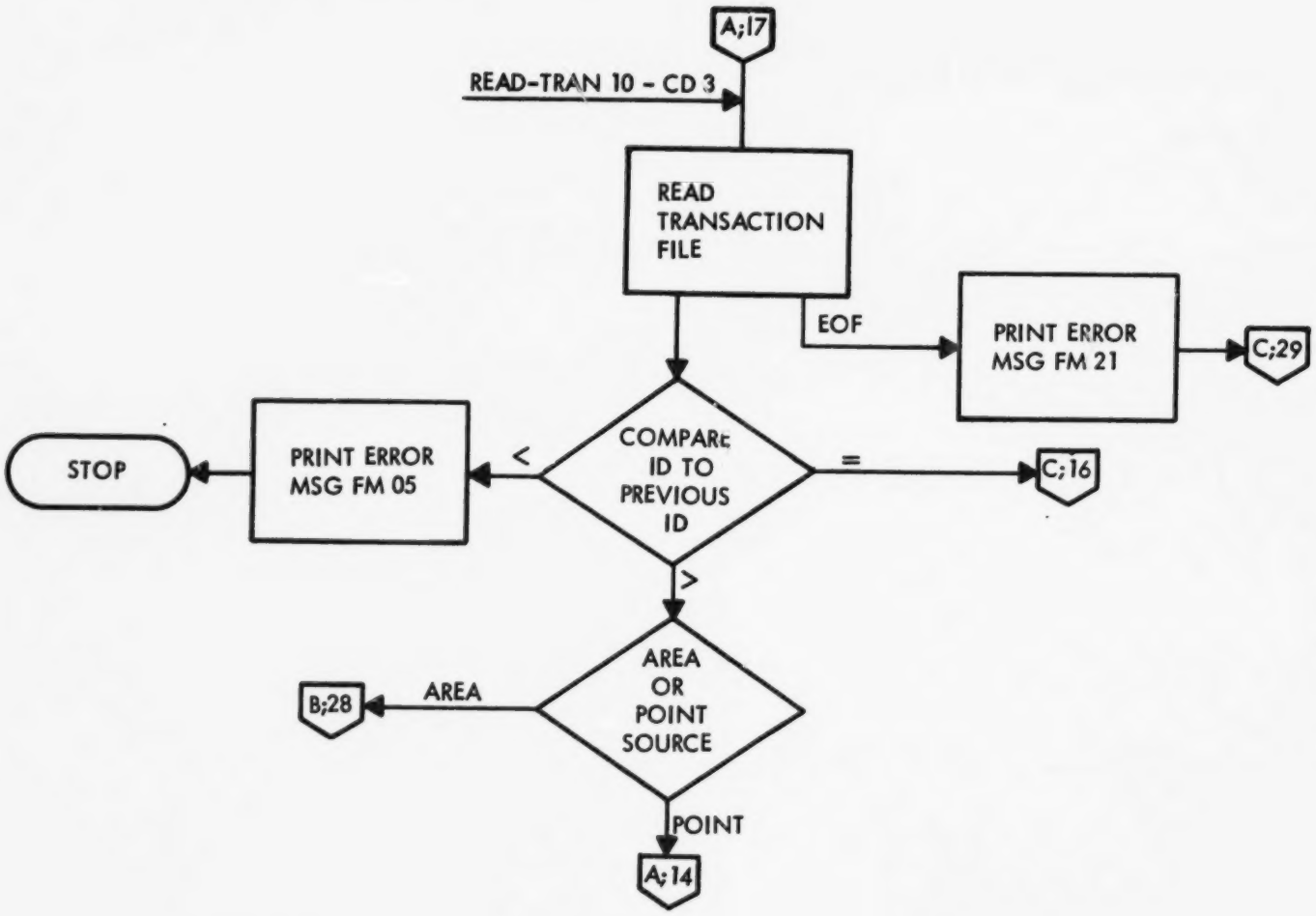

A;12
READ-OLD 2
READ OLD SOURCE FILE
B;12
D6
EOF
PRINT ERROR MSG FM 14 CLOSE FILE
STOP
A;12
COPY OLD RECORD ONTO NEW SOURCE FILE
<
COMPARE OLD SOURCE TO TRANS
=
B;21
C;12
READ-TRAN 12
>
READ TRANSACTION FILE
EOF
C;29
STOP
PRINT ERROR MSG FM 05
<
COMPARE ID TO PREVIOUS ID
=
COMPARE TRANSACTION CODES
≠
D;12
>
=
D;12
B12
B;28
AREA
AREA OR POINT SOURCE
POINT
A;13
PRINT ERROR MSG FM 06
C;12

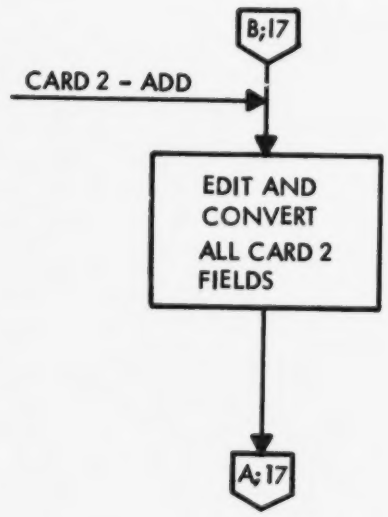

A;13
IS TRANSACTION A DELETE
YES
D;10
NO
IS TRANSACTION A CHANGE
YES
B;12
NO
IS TRANSACTION AN ADD
YES
B;15
NO
PRINT ERROR MSG FM 19
B;11

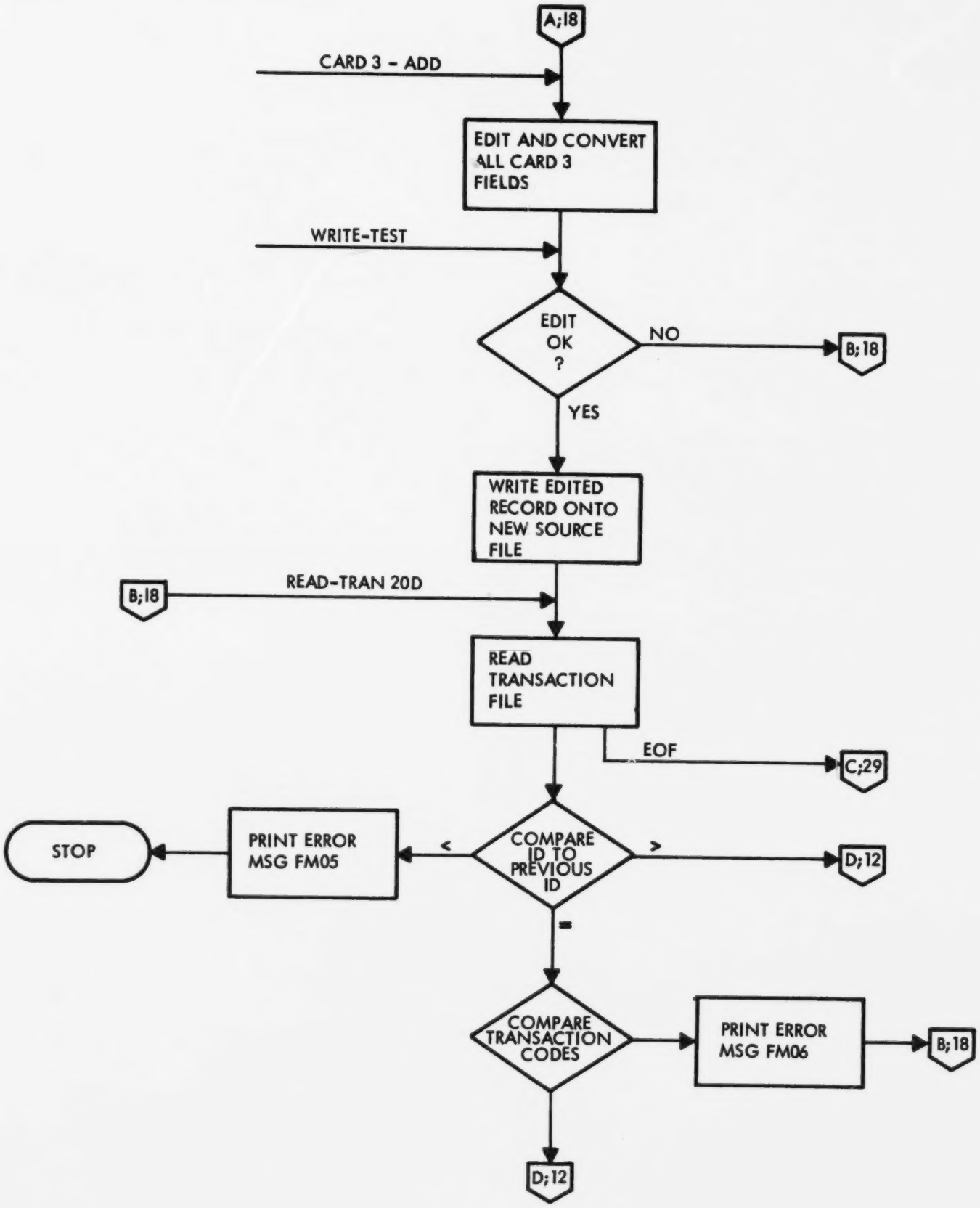

A;14
TRANS-CODE-TEST 2
IS TRANSACTION A DELETE
YES
D;10
NO
IS TRANSACTION A CHANGE
YES
B;12
NO
IS TRANSACTION AN ADD
YES
B;15
NO
PRINT ERROR MSG FM 29
B;10

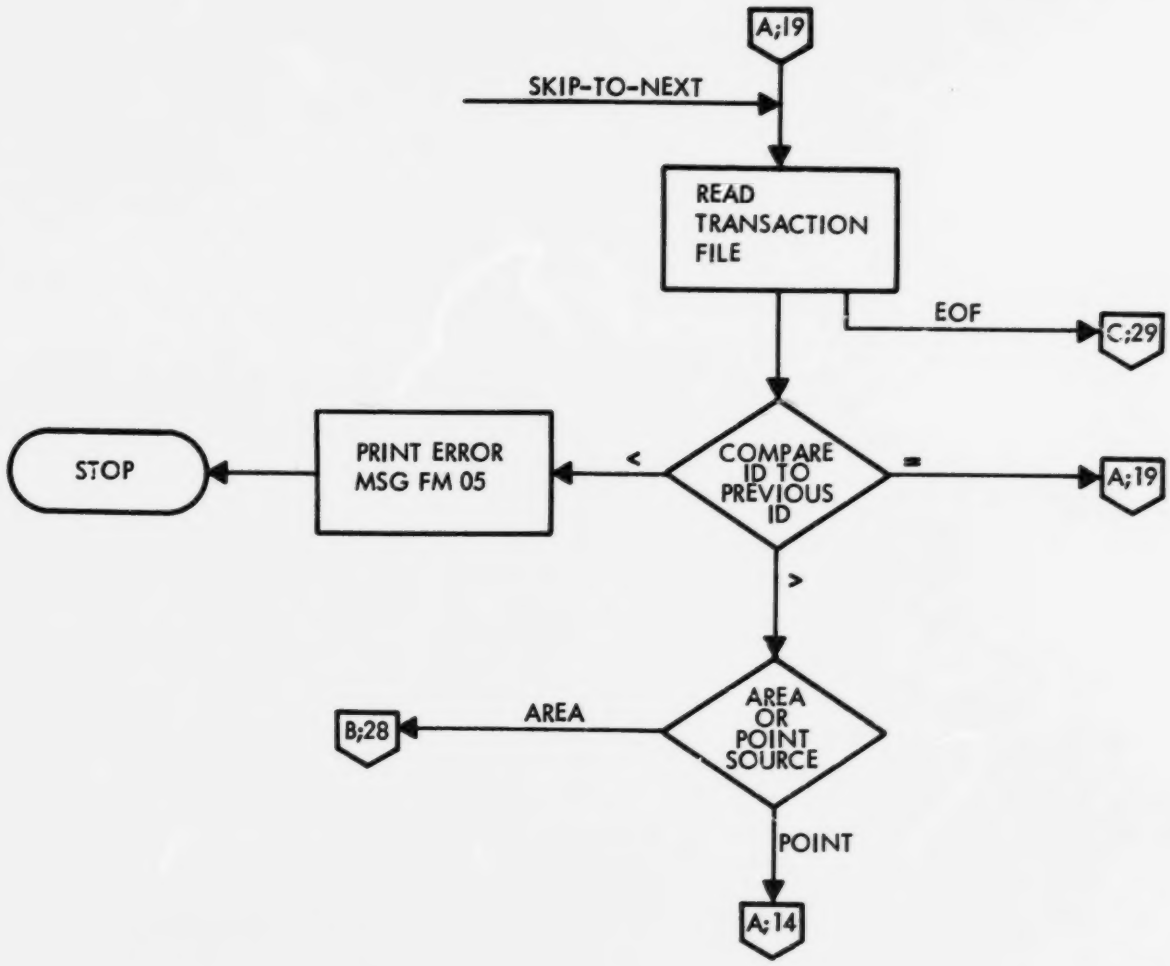

A;15
READ-OLD 3
READ OLD SOURCE FILE
B;15
E10
EOF
PRINT ERROR MSG FM 17 "NO DUMMY RECORD" CLOSE FILES
STOP
A;15
COPY OLD RECORD ONTO NEW SOURCE FILE
<
COM-PARE OLD SOURCE TO TRANS
=
B;21
C;15
CARD 1- TEST 2
>
CARD 1 ?
NO
PRINT ERROR MSG FM 20
A;19
D;15
CARD 1 - ADD
YES
EDIT AND CONVERT ALL CARD 1 FIELDS
E;15
READ - TRAN 10
READ TRANSACTION FILE
EOF
PRINT ERROR MSG FM 21
C;29
STOP
PRINT ERROR MSG FM 05
<
COM-PARE ID TO PREVIOUS ID
=
B;16
>
A;16

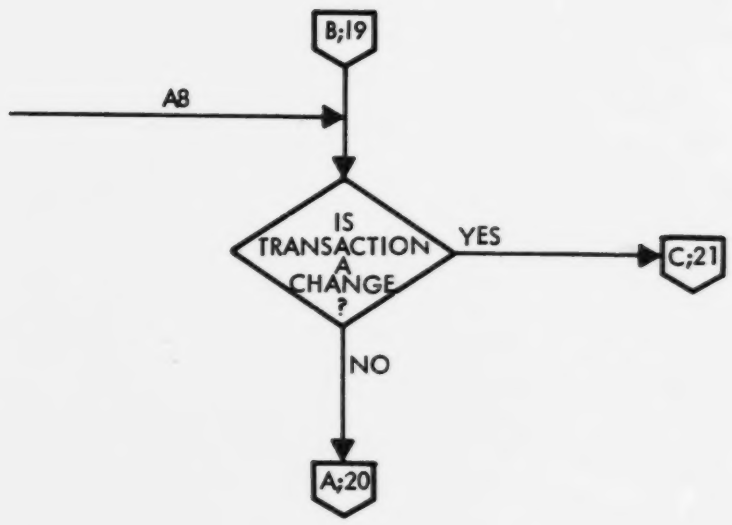

A;16
PRINT ERROR
MSG FM 21
AREA
OR
POINT
SOURCE
AREA
B;28
A;14
B;16
CARD 2 - TEST 2
CARD
2
?
YES
B;17
NO
MOVE ZEROS
TO CARD 2
FIELDS OF NEW SOURCE
C;16
CARD 3 - TEST 2
CARD
3
?
NO
PRINT ERROR
MSG FM 21
A;18
YES
A;18

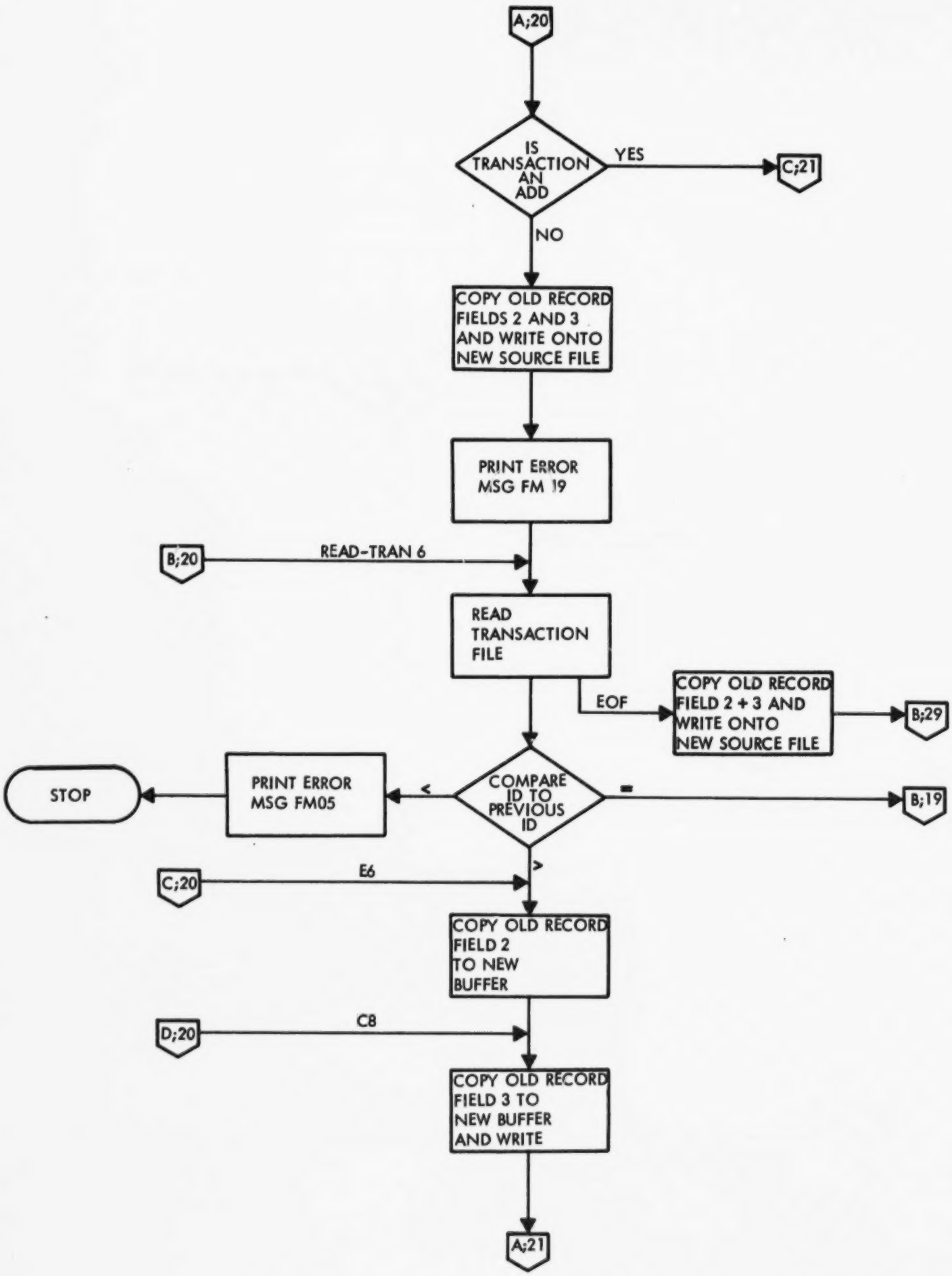

A;17
READ-TRAN 10 - CD 3
READ TRANSACTION FILE
EOF
PRINT ERROR MSG FM 21
C;29
COMPARE ID TO PREVIOUS ID
<
=
>
STOP
PRINT ERROR MSG FM 05
C;16
AREA OR POINT SOURCE
AREA
B;28
POINT
A;14

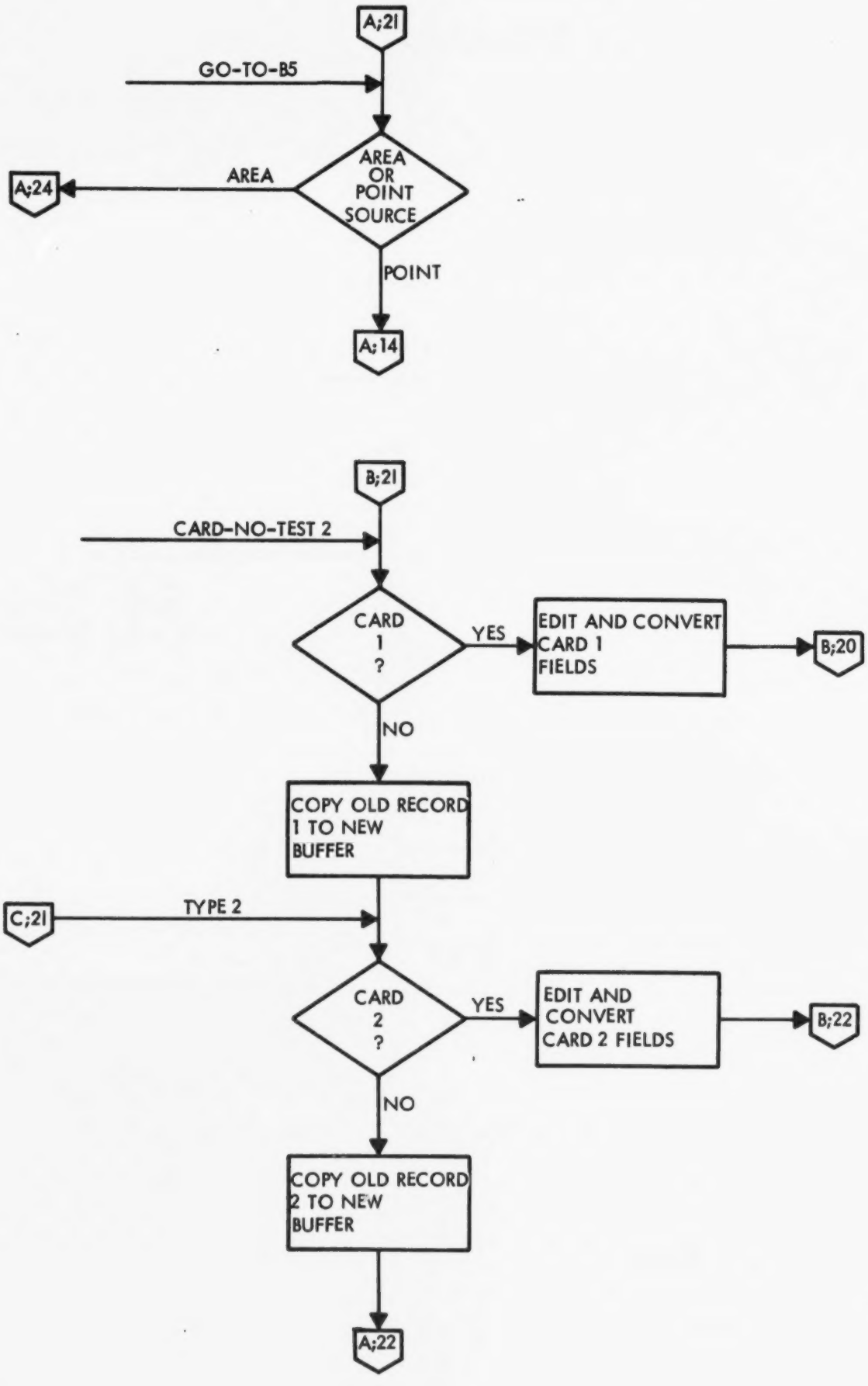

B;17
CARD 2 - ADD
EDIT AND CONVERT ALL CARD 2 FIELDS
A;17

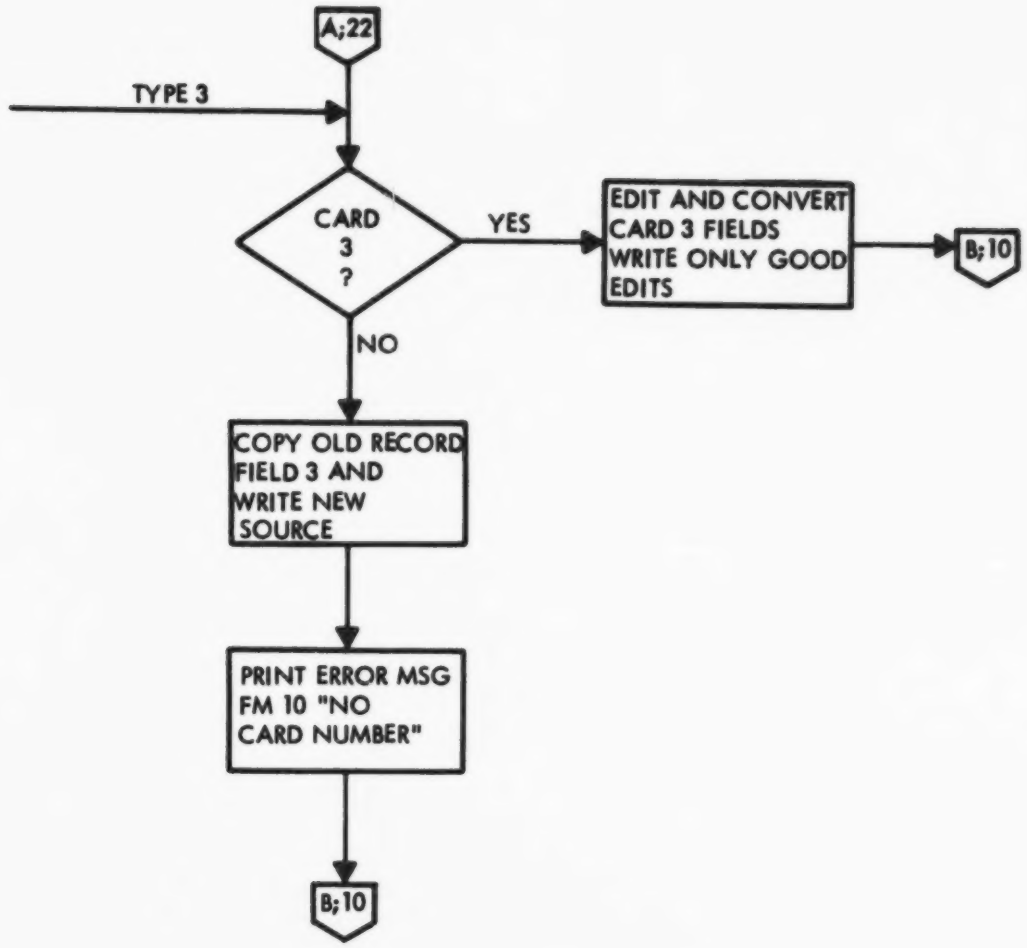

A;18
CARD 3 - ADD
EDIT AND CONVERT ALL CARD 3 FIELDS
WRITE-TEST
EDIT OK ?
NO
B;18
YES
WRITE EDITED RECORD ONTO NEW SOURCE FILE
B;18
READ-TRAN 20D
READ TRANSACTION FILE
EOF
C;29
STOP
PRINT ERROR MSG FM05
<
COMPARE ID TO PREVIOUS ID
>
D;12
=
COMPARE TRANSACTION CODES
PRINT ERROR MSG FM06
B;18
D;12

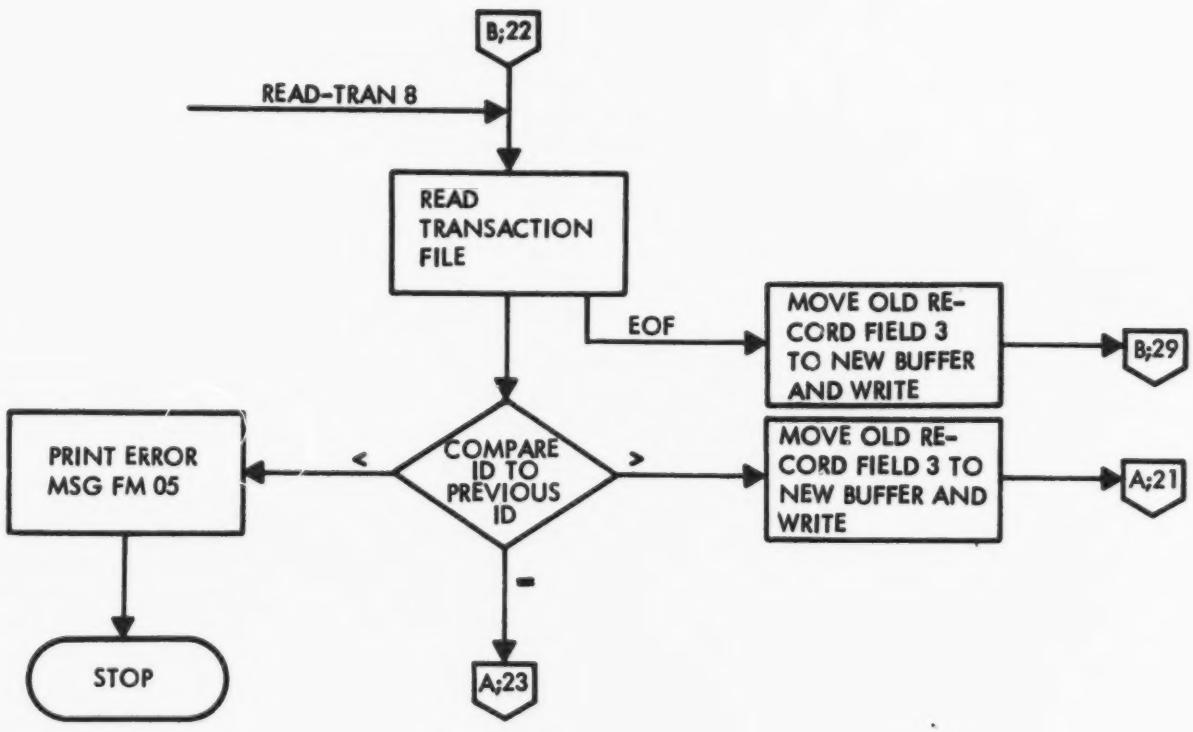

A;19
SKIP-TO-NEXT
READ TRANSACTION FILE
EOF
C;29
STOP
PRINT ERROR MSG FM 05
<
COMPARE ID TO PREVIOUS ID
=
A;19
>
AREA OR POINT SOURCE
AREA
B;28
POINT
A;14

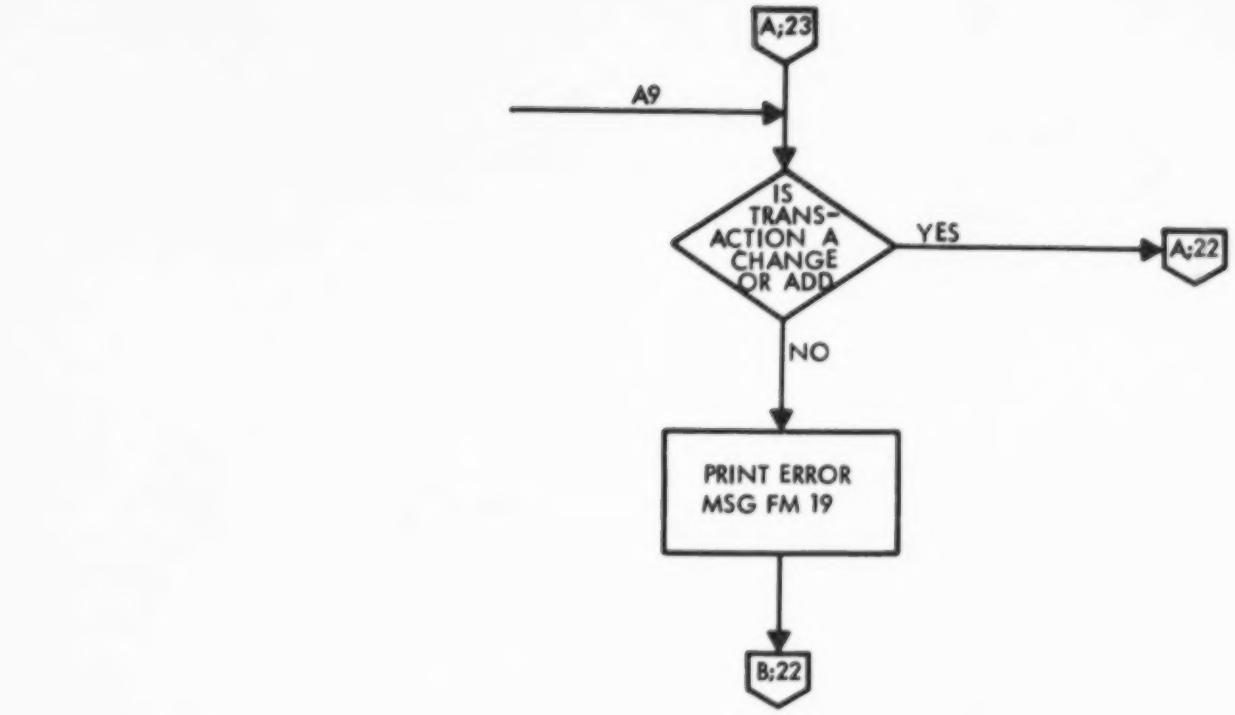

B;19
A8
IS TRANSACTION A CHANGE ?
YES
C;21
NO
A;20

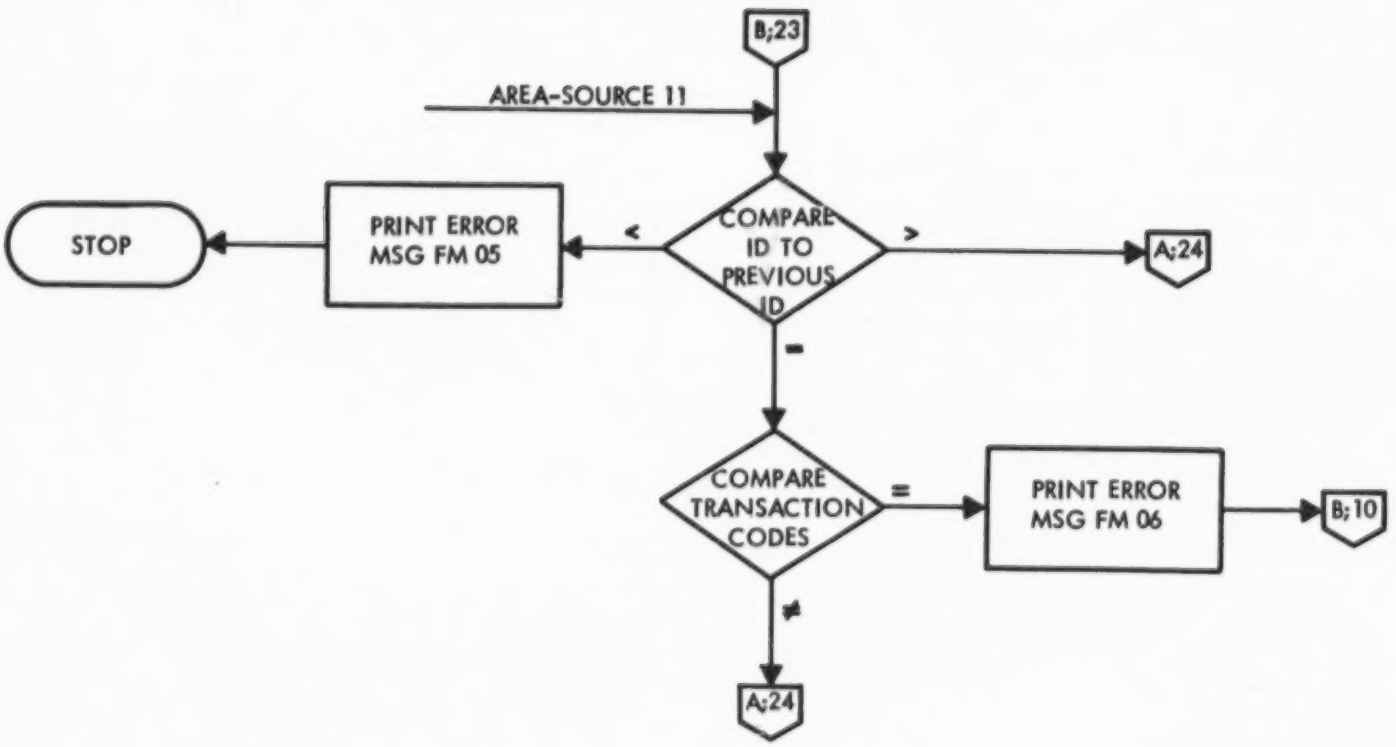

A;20
IS TRANSACTION AN ADD
YES
C;21
NO
COPY OLD RECORD FIELDS 2 AND 3 AND WRITE ONTO NEW SOURCE FILE
PRINT ERROR MSG FM 19
B;20
READ-TRAN 6
READ TRANSACTION FILE
EOF
COPY OLD RECORD FIELD 2 + 3 AND WRITE ONTO NEW SOURCE FILE
B;29
STOP
PRINT ERROR MSG FM05
<
COMPARE ID TO PREVIOUS ID
=
B;19
>
C;20
E6
COPY OLD RECORD FIELD 2 TO NEW BUFFER
D;20
C8
COPY OLD RECORD FIELD 3 TO NEW BUFFER AND WRITE
A;21

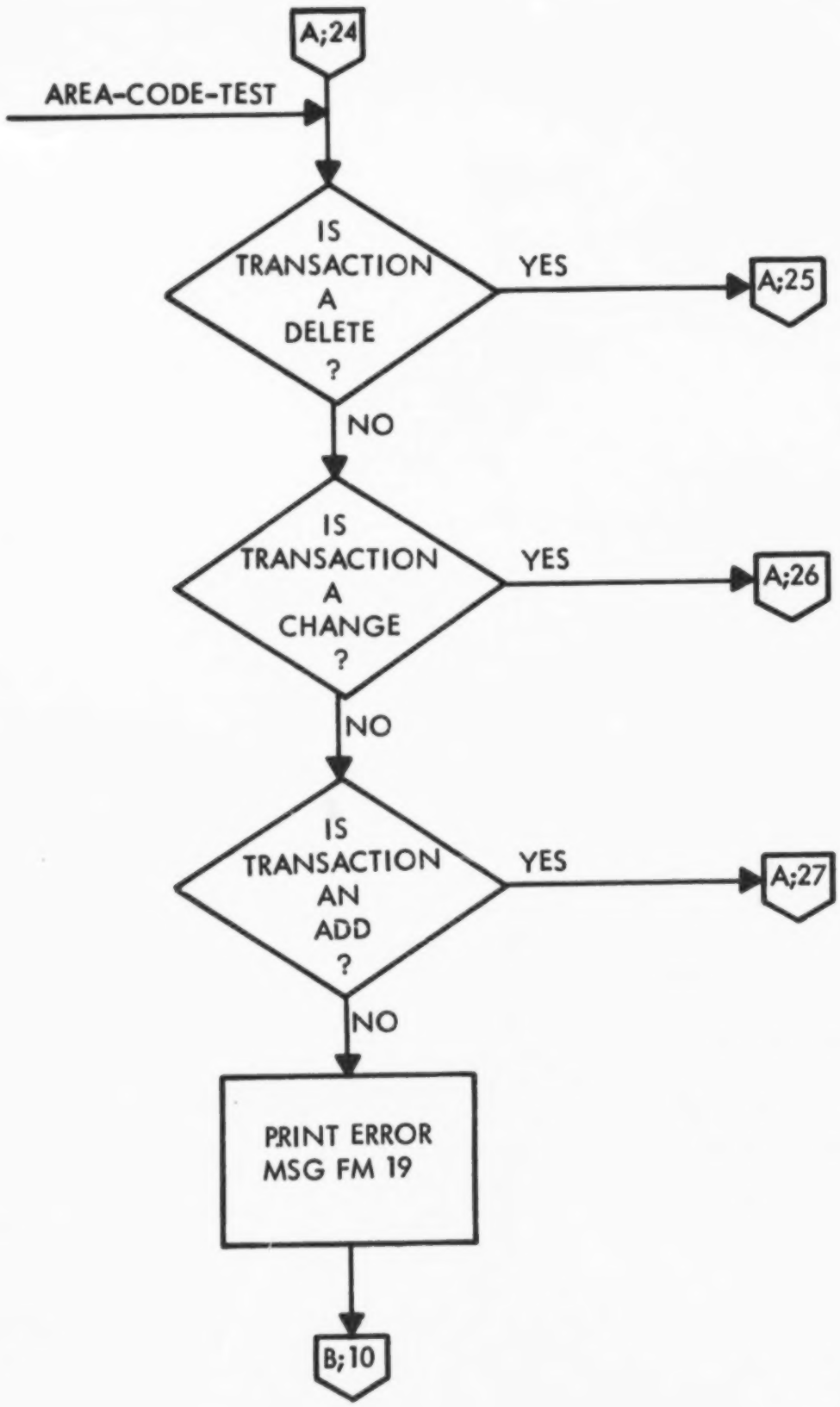

A;21
GO-TO-B5
AREA OR POINT SOURCE
AREA
A;24
POINT
A;14
B;21
CARD-NO-TEST 2
CARD 1 ?
YES
EDIT AND CONVERT CARD 1 FIELDS
B;20
NO
COPY OLD RECORD 1 TO NEW BUFFER
C;21
TYPE 2
CARD 2 ?
YES
EDIT AND CONVERT CARD 2 FIELDS
B;22
NO
COPY OLD RECORD 2 TO NEW BUFFER
A;22

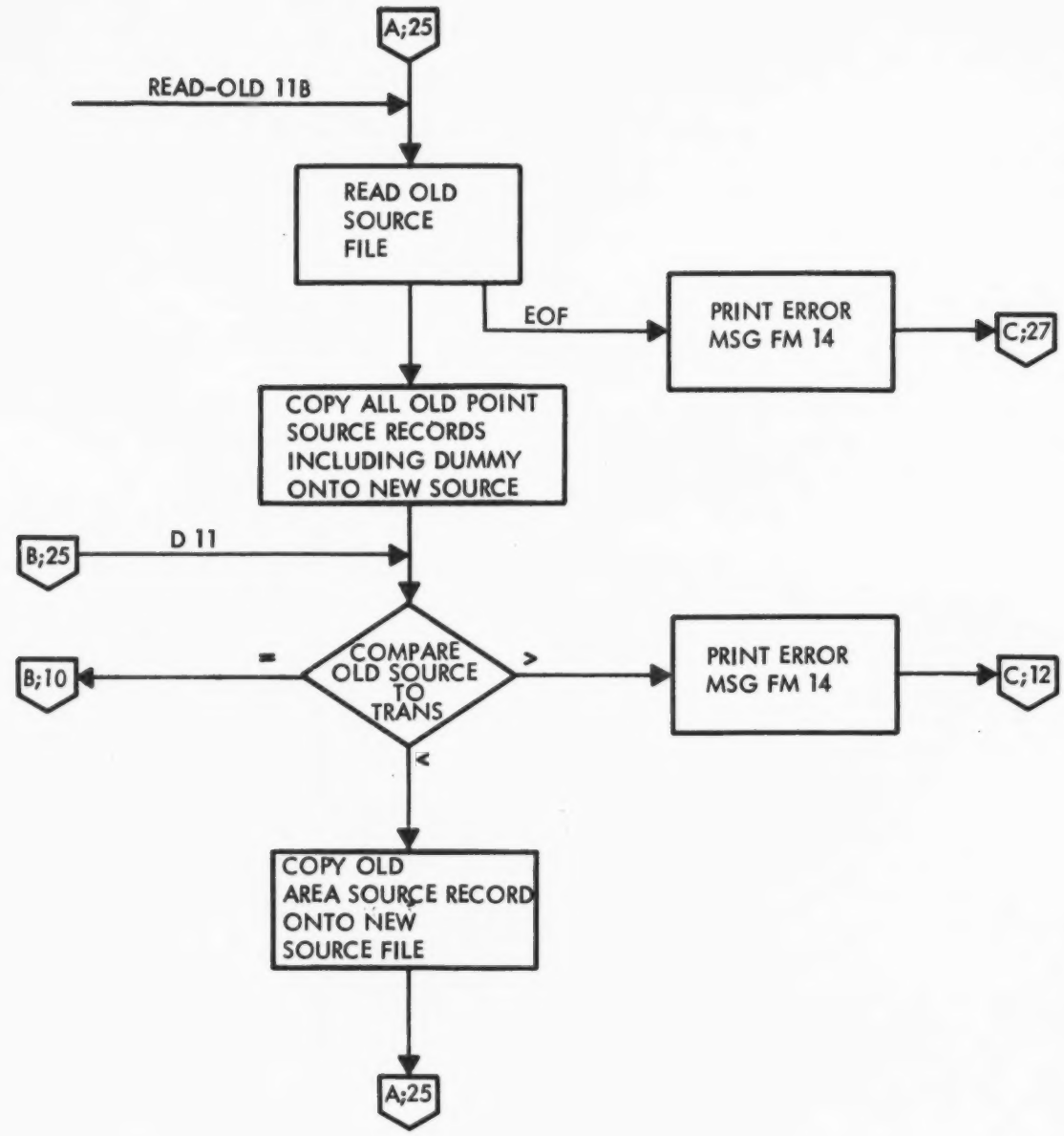

A;22
TYPE 3
CARD 3 ?
YES
EDIT AND CONVERT CARD 3 FIELDS WRITE ONLY GOOD EDITS
B;10
NO
COPY OLD RECORD FIELD 3 AND WRITE NEW SOURCE
PRINT ERROR MSG FM 10 "NO CARD NUMBER"
B;10

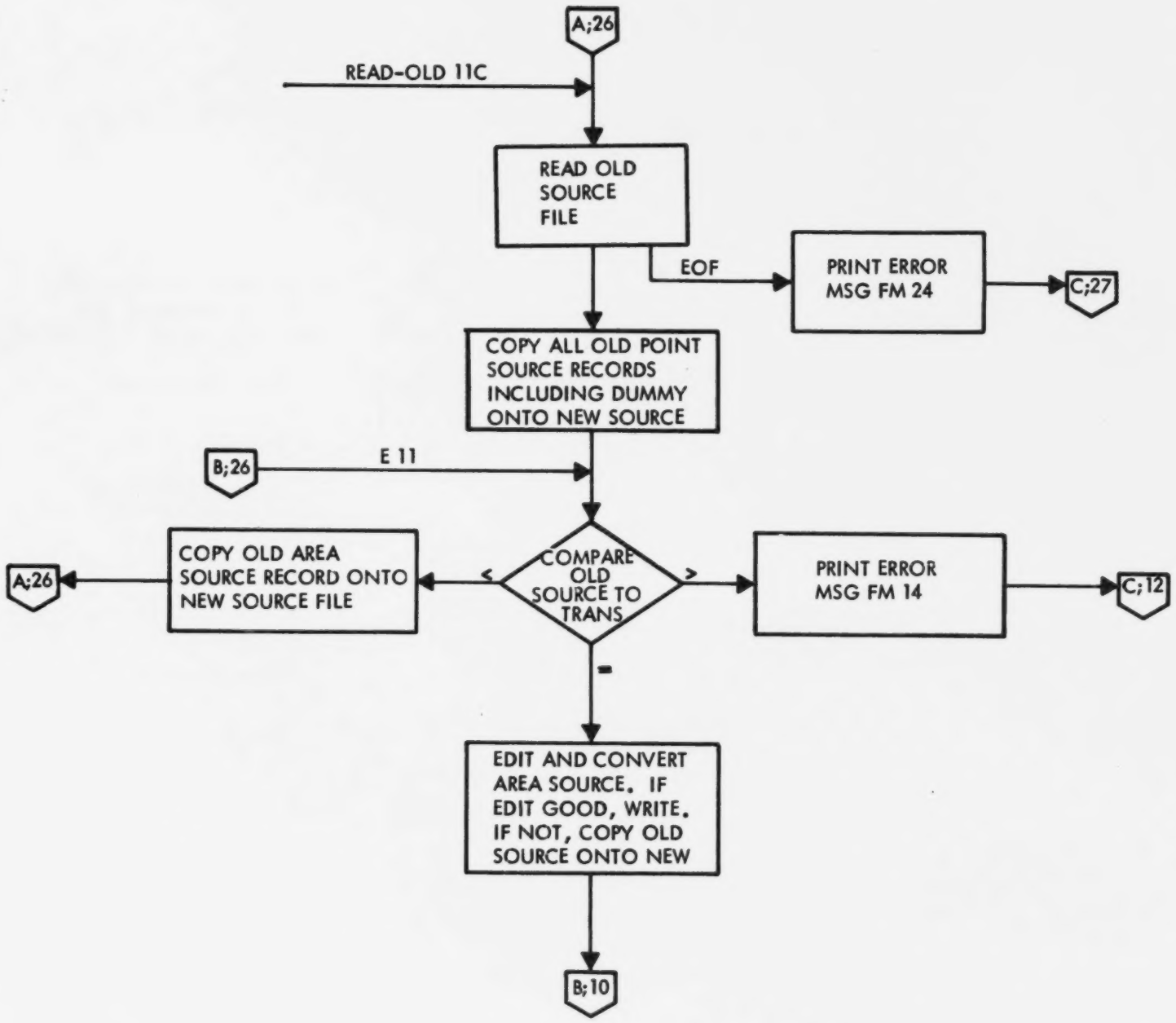

B;22
READ-TRAN 8
READ TRANSACTION FILE
EOF
MOVE OLD RECORD FIELD 3 TO NEW BUFFER AND WRITE
B;29
PRINT ERROR MSG FM 05
<
COMPARE ID TO PREVIOUS ID
>
MOVE OLD RECORD FIELD 3 TO NEW BUFFER AND WRITE
A;21
=
STOP
A;23

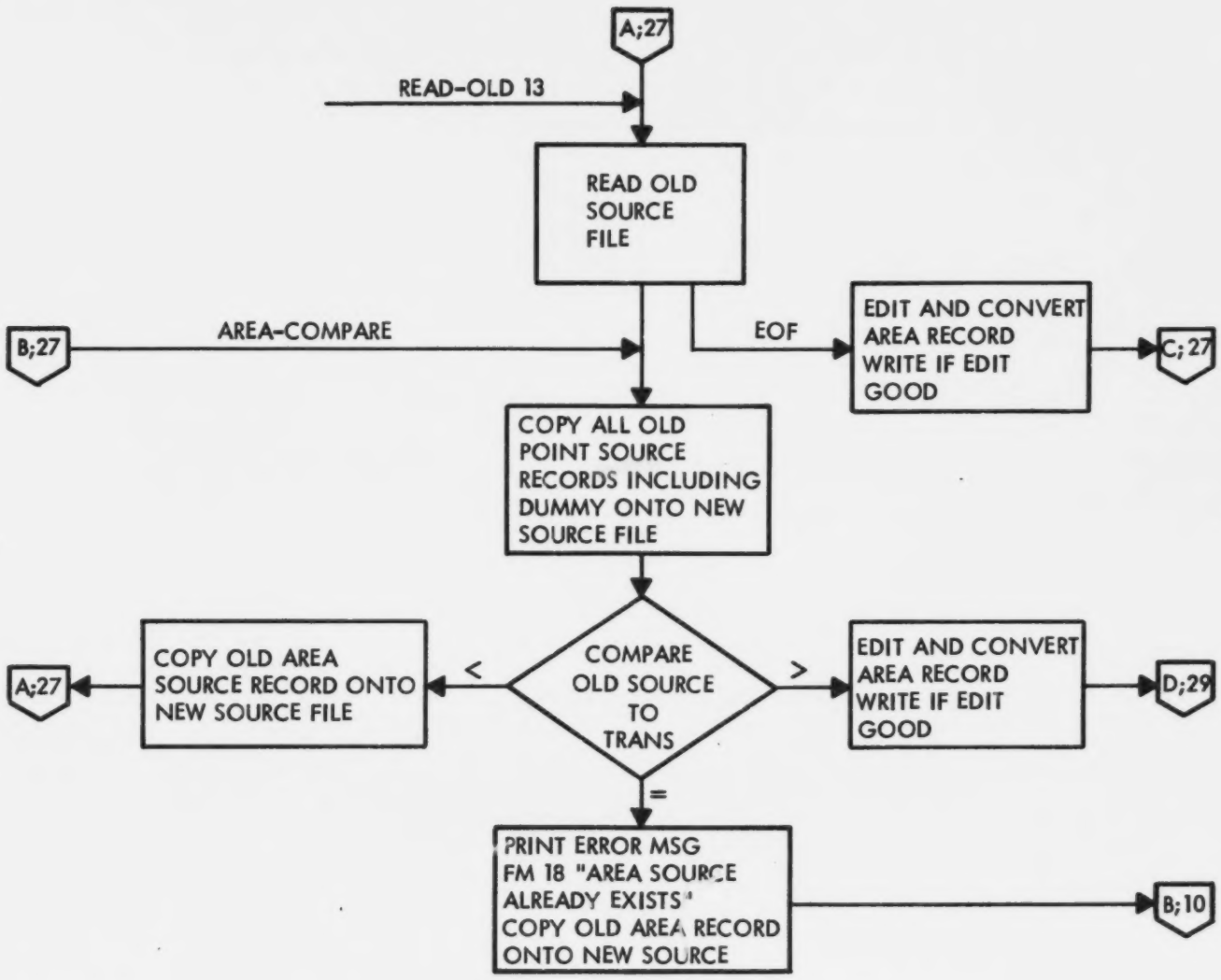

A;23
A9
IS TRANS-ACTION A CHANGE OR ADD
YES
A;22
NO
PRINT ERROR MSG FM 19
B;22

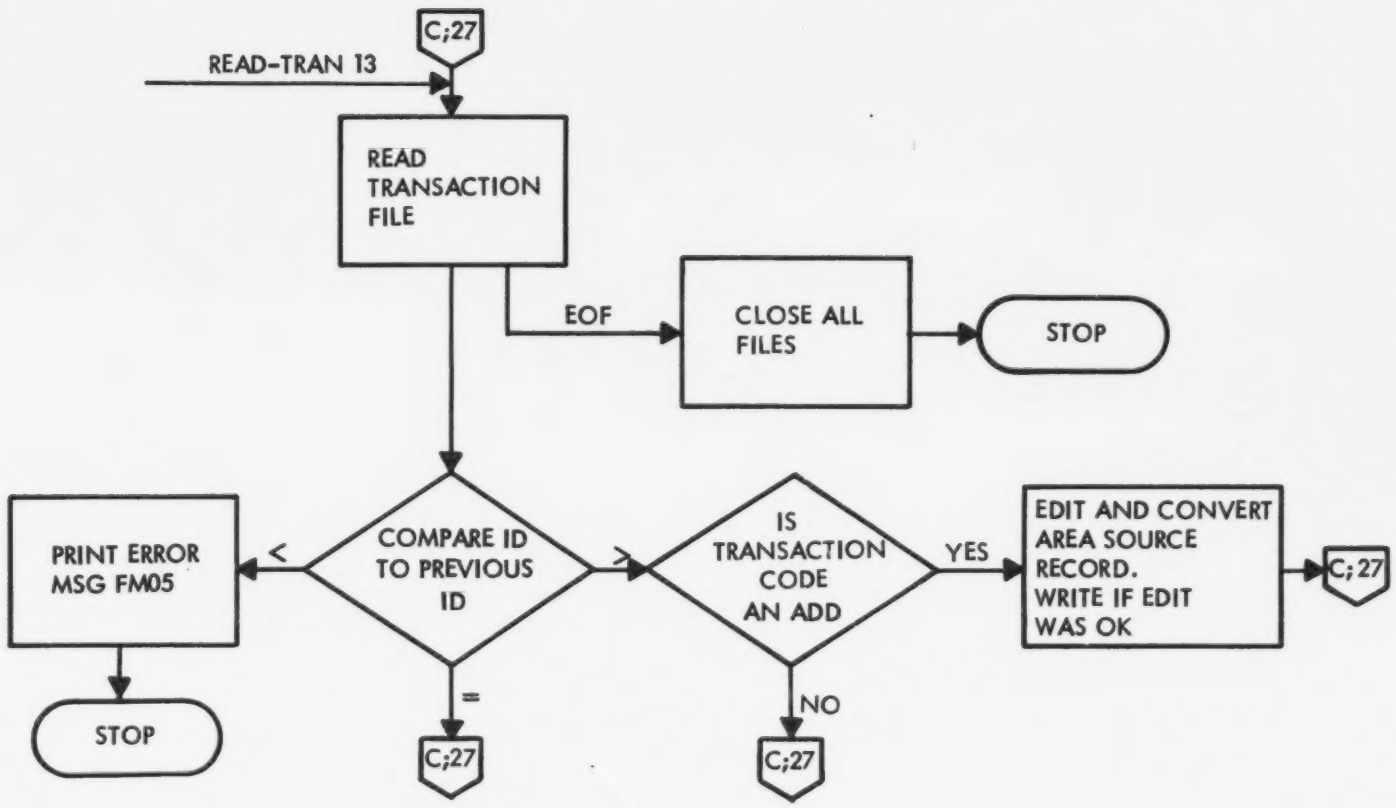

B;23
AREA-SOURCE 11
STOP
PRINT ERROR MSG FM 05
<
COMPARE ID TO PREVIOUS ID
>
A;24
=
COMPARE TRANSACTION CODES
=
PRINT ERROR MSG FM 06
B;10
≠
A;24

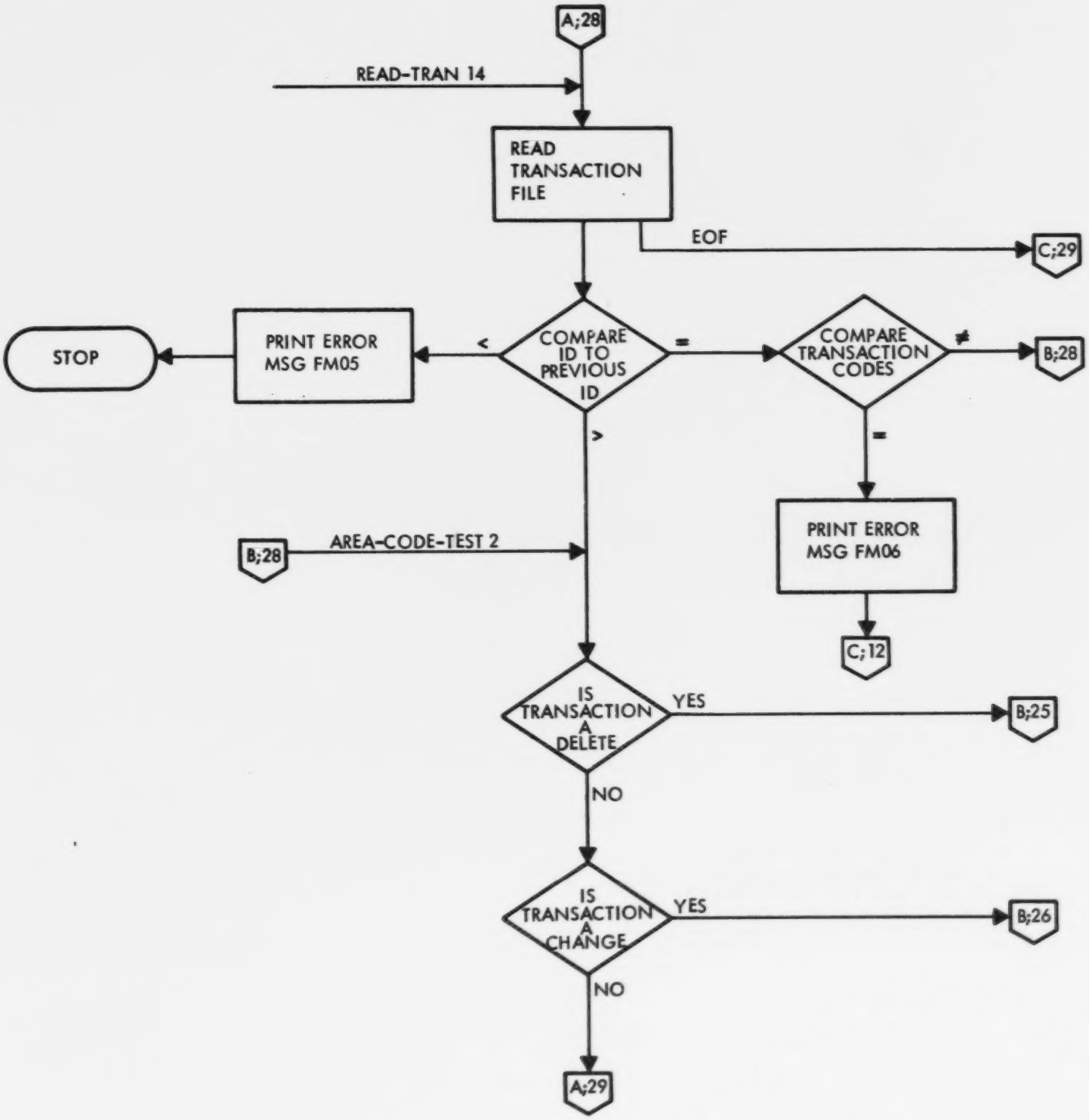

A;24
AREA-CODE-TEST
IS TRANSACTION A DELETE ?
YES
A;25
NO
IS TRANSACTION A CHANGE ?
YES
A;26
NO
IS TRANSACTION AN ADD ?
YES
A;27
NO
PRINT ERROR MSG FM 19
B;10

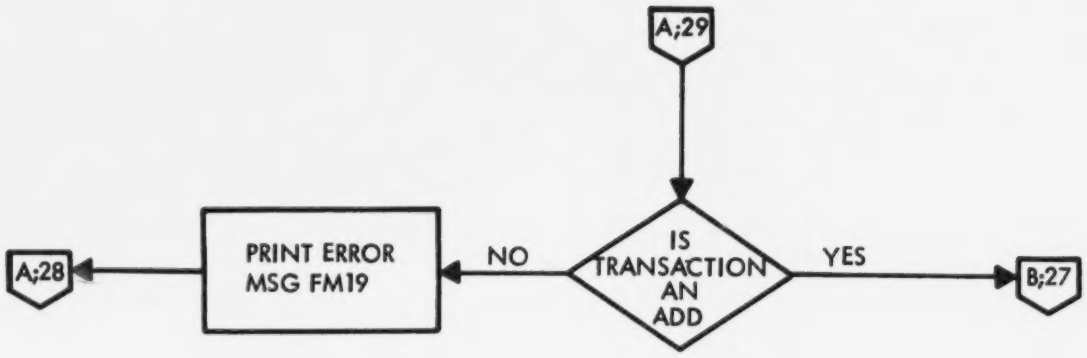

A;25
READ-OLD 11B
READ OLD SOURCE FILE
EOF
PRINT ERROR MSG FM 14
C;27
COPY ALL OLD POINT SOURCE RECORDS INCLUDING DUMMY ONTO NEW SOURCE
B;25
D 11
COMPARE OLD SOURCE TO TRANS
=
B;10
>
PRINT ERROR MSG FM 14
C;12
<
COPY OLD AREA SOURCE RECORD ONTO NEW SOURCE FILE
A;25

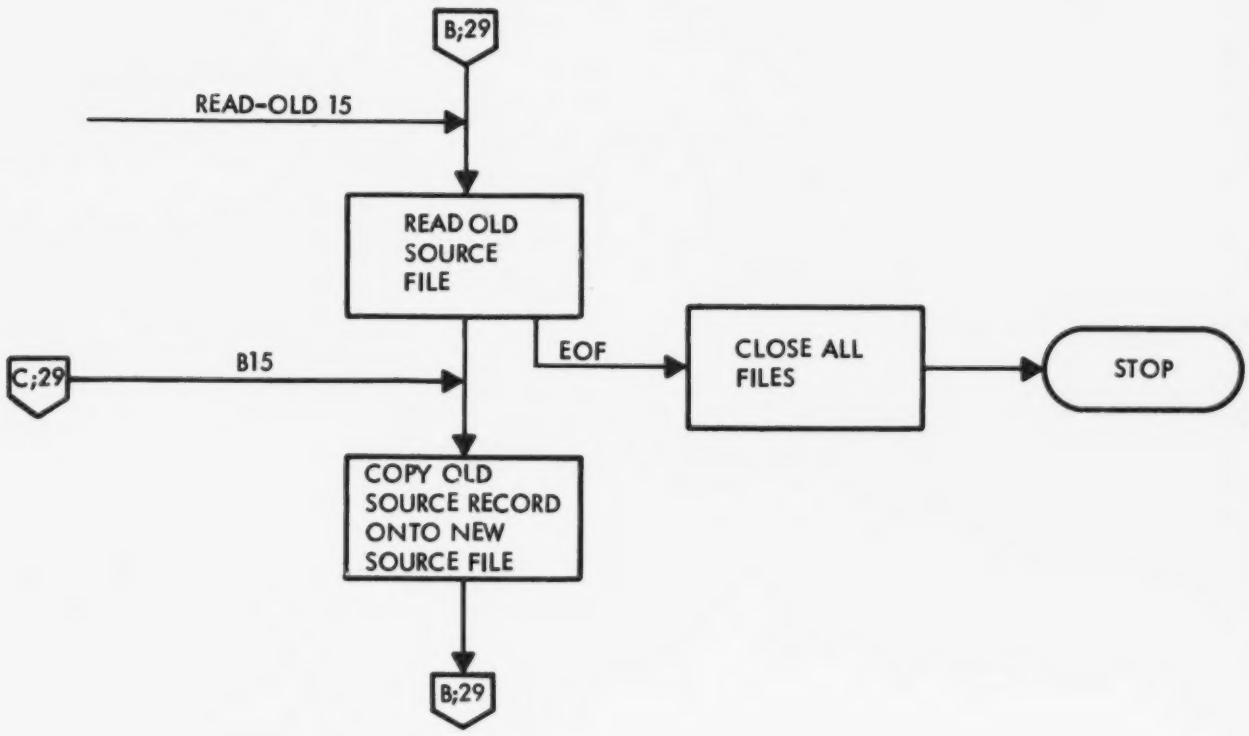

A;26
READ-OLD 11C
READ OLD SOURCE FILE
EOF
PRINT ERROR MSG FM 24
C;27
COPY ALL OLD POINT SOURCE RECORDS INCLUDING DUMMY ONTO NEW SOURCE
B;26
E 11
COPY OLD AREA SOURCE RECORD ONTO NEW SOURCE FILE
A;26
COMPARE OLD SOURCE TO TRANS
<
>
=
PRINT ERROR MSG FM 14
C;12
EDIT AND CONVERT AREA SOURCE. IF EDIT GOOD, WRITE. IF NOT, COPY OLD SOURCE ONTO NEW
B;10

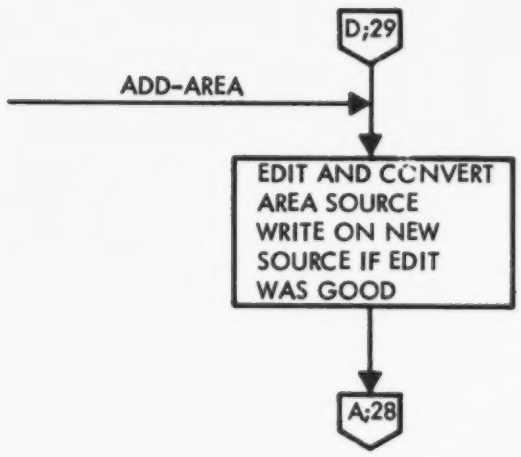

A;27
READ-OLD 13
READ OLD SOURCE FILE
B;27
AREA-COMPARE
EOF
EDIT AND CONVERT AREA RECORD WRITE IF EDIT GOOD
C;27
COPY ALL OLD POINT SOURCE RECORDS INCLUDING DUMMY ONTO NEW SOURCE FILE
A;27
COPY OLD AREA SOURCE RECORD ONTO NEW SOURCE FILE
<
COMPARE OLD SOURCE TO TRANS
>
EDIT AND CONVERT AREA RECORD WRITE IF EDIT GOOD
D;29
=
PRINT ERROR MSG FM 18 "AREA SOURCE ALREADY EXISTS" COPY OLD AREA RECORD ONTO NEW SOURCE
B;10

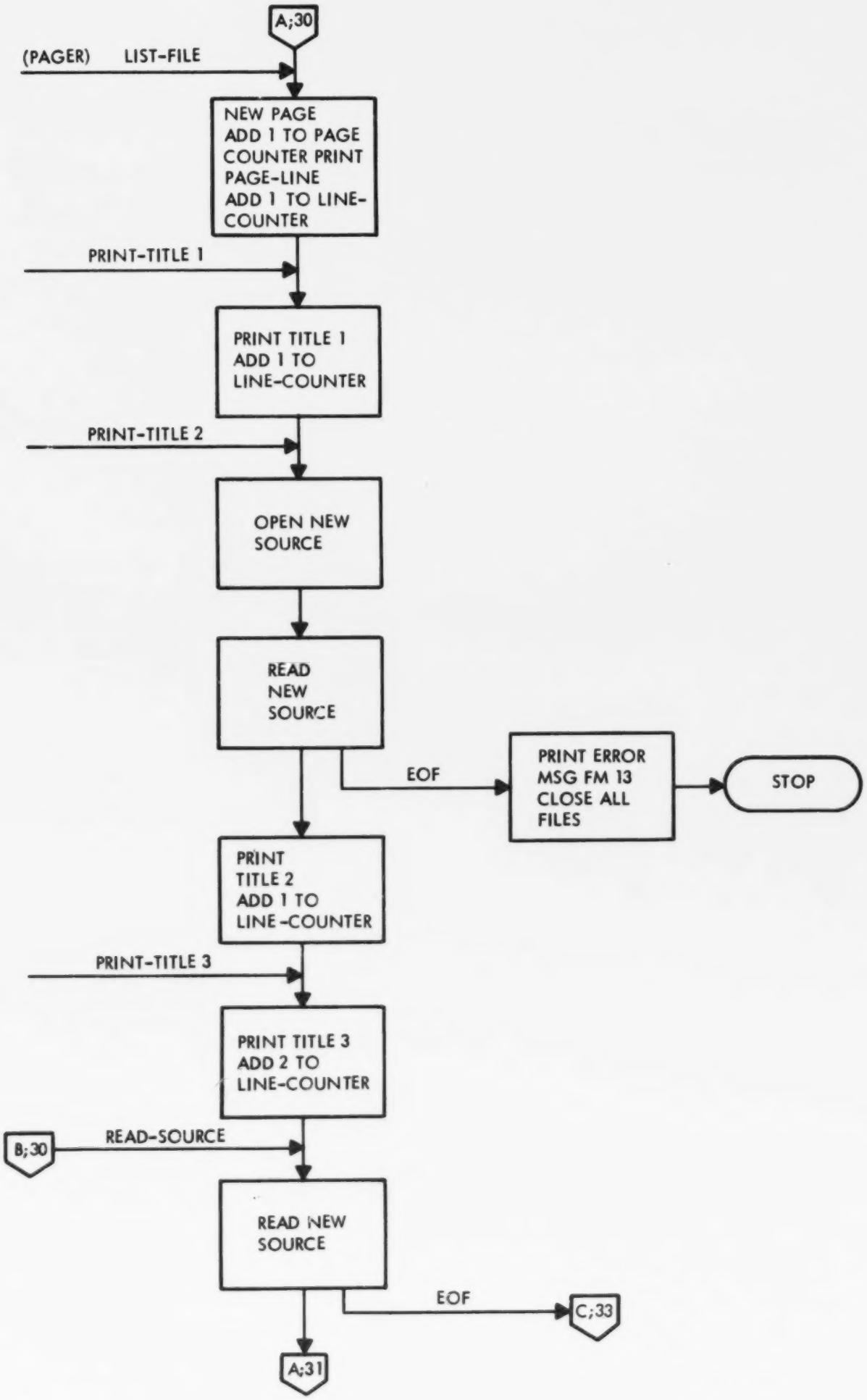

C;27
READ-TRAN 13
READ TRANSACTION FILE
EOF
CLOSE ALL FILES
STOP
PRINT ERROR MSG FM05
<
COMPARE ID TO PREVIOUS ID
>
IS TRANSACTION CODE AN ADD
YES
EDIT AND CONVERT AREA SOURCE RECORD. WRITE IF EDIT WAS OK
C;27
STOP
=
C;27
NO
C;27

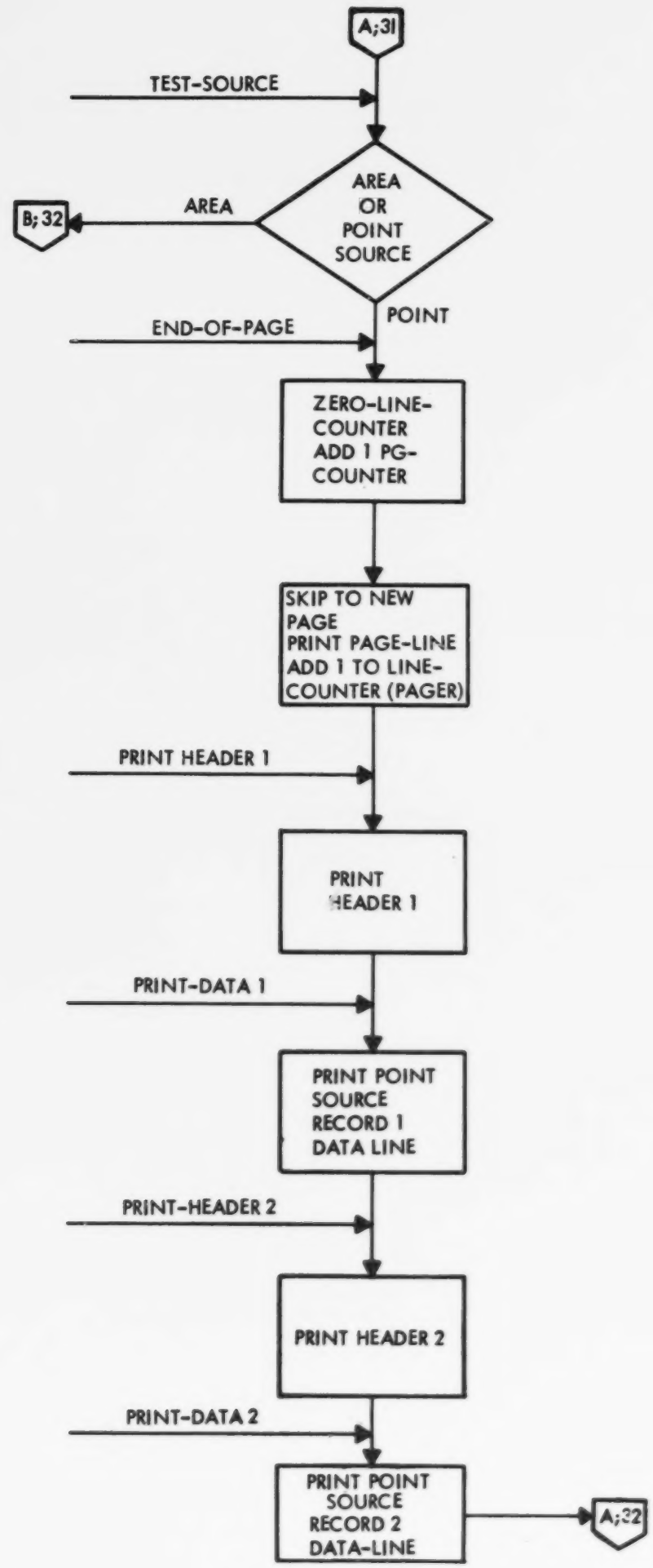

A;28
READ-TRAN 14
READ TRANSACTION FILE
EOF
C;29
COMPARE ID TO PREVIOUS ID
<
=
>
PRINT ERROR MSG FM05
STOP
COMPARE TRANSACTION CODES
≠
B;28
=
PRINT ERROR MSG FM06
C;12
B;28
AREA-CODE-TEST 2
IS TRANSACTION A DELETE
YES
B;25
NO
IS TRANSACTION A CHANGE
YES
B;26
NO
A;29

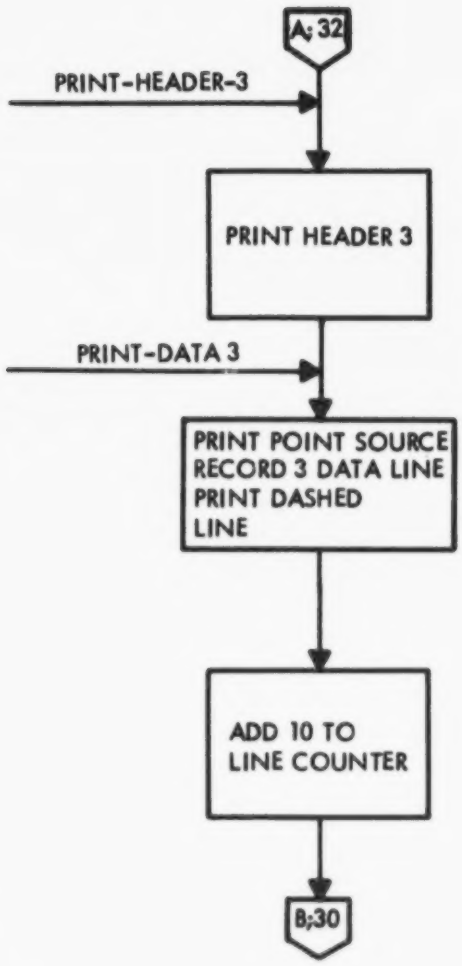

A;29
IS TRANSACTION AN ADD
NO
PRINT ERROR MSG FM19
A;28
YES
B;27

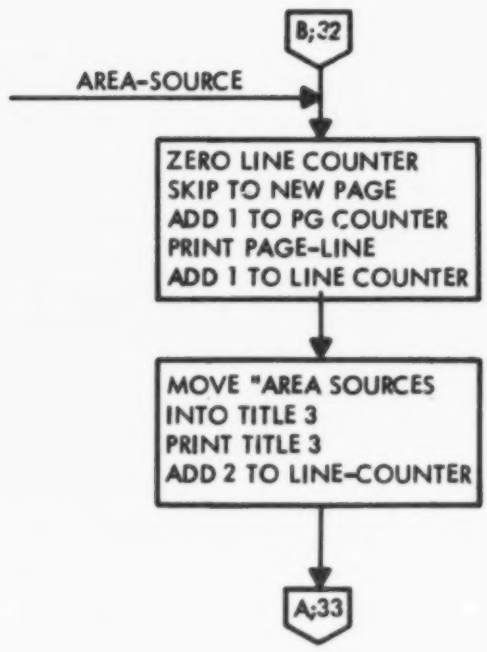

B;29
READ-OLD 15
READ OLD SOURCE FILE
EOF
CLOSE ALL FILES
STOP
C;29
B15
COPY OLD SOURCE RECORD ONTO NEW SOURCE FILE
B;29

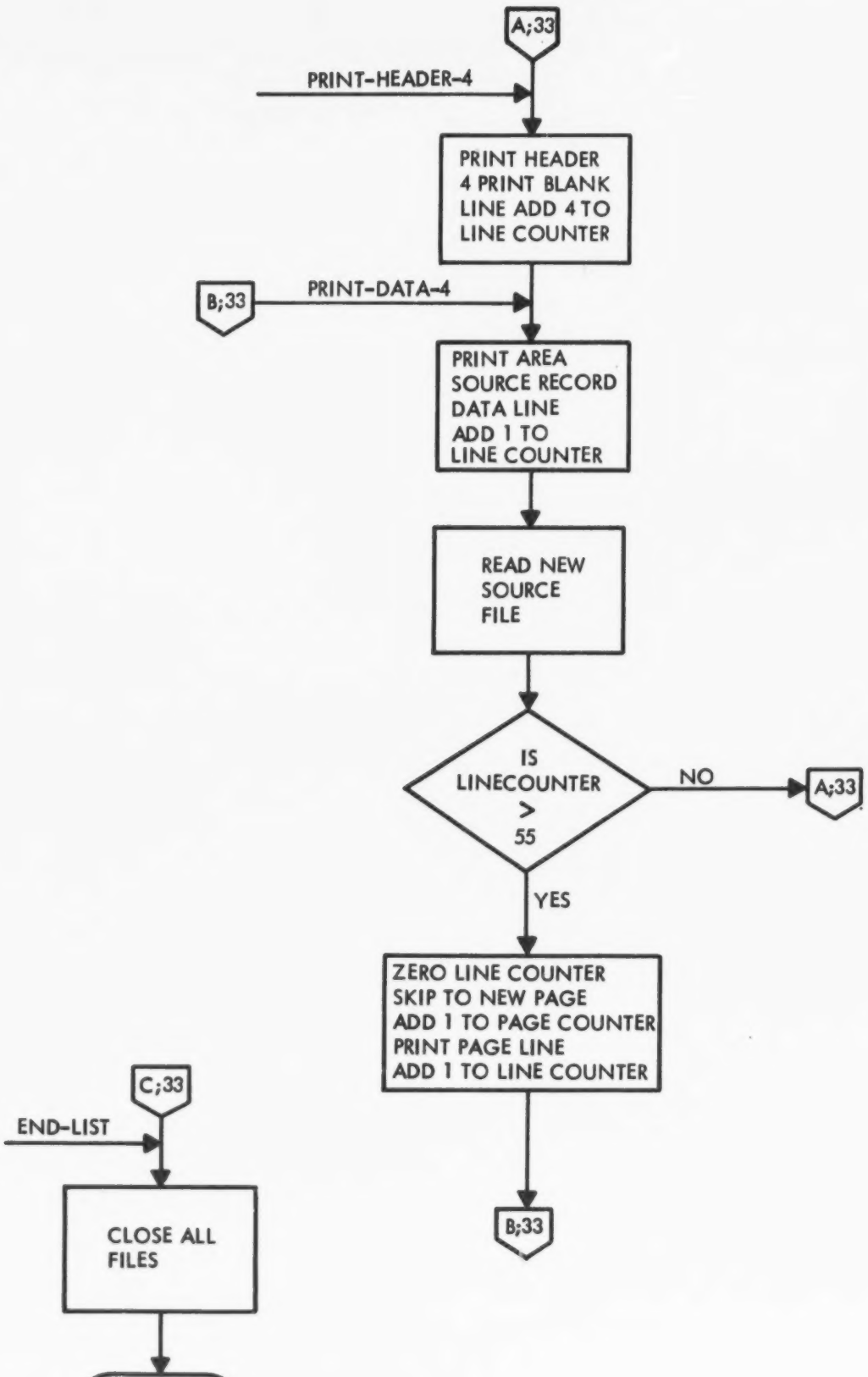

D;29
ADD-AREA
EDIT AND CONVERT AREA SOURCE WRITE ON NEW SOURCE IF EDIT WAS GOOD
A;28


A;30
(PAGER) LIST-FILE
NEW PAGE
ADD 1 TO PAGE
COUNTER PRINT
PAGE-LINE
ADD 1 TO LINE-
COUNTER
PRINT-TITLE 1
PRINT TITLE 1
ADD 1 TO
LINE-COUNTER
PRINT-TITLE 2
OPEN NEW
SOURCE
READ
NEW
SOURCE
EOF
PRINT ERROR
MSG FM 13
CLOSE ALL
FILES
STOP
PRINT
TITLE 2
ADD 1 TO
LINE-COUNTER
PRINT-TITLE 3
PRINT TITLE 3
ADD 2 TO
LINE-COUNTER
B;30
READ-SOURCE
READ NEW
SOURCE
EOF
C;33
A;31


A;31
TEST-SOURCE
AREA
OR
POINT
SOURCE
AREA
B;32
POINT
END-OF-PAGE
ZERO-LINE-
COUNTER
ADD 1 PG-
COUNTER
SKIP TO NEW
PAGE
PRINT PAGE-LINE
ADD 1 TO LINE-
COUNTER (PAGER)
PRINT HEADER 1
PRINT
HEADER 1
PRINT-DATA 1
PRINT POINT
SOURCE
RECORD 1
DATA LINE
PRINT-HEADER 2
PRINT HEADER 2
PRINT-DATA 2
PRINT POINT
SOURCE
RECORD 2
DATA-LINE
A;32


A;32
PRINT-HEADER-3
PRINT HEADER 3
PRINT-DATA 3
PRINT POINT SOURCE
RECORD 3 DATA LINE
PRINT DASHED
LINE
ADD 10 TO
LINE COUNTER
B;30


B;32
AREA-SOURCE
ZERO LINE COUNTER
SKIP TO NEW PAGE
ADD 1 TO PG COUNTER
PRINT PAGE-LINE
ADD 1 TO LINE COUNTER
MOVE "AREA SOURCES
INTO TITLE 3
PRINT TITLE 3
ADD 2 TO LINE-COUNTER
A;33


A;33
PRINT-HEADER-4
PRINT HEADER
4 PRINT BLANK
LINE ADD 4 TO
LINE COUNTER
B;33
PRINT-DATA-4
PRINT AREA
SOURCE RECORD
DATA LINE
ADD 1 TO
LINE COUNTER
READ NEW
SOURCE
FILE
IS
LINECOUNTER
>
55
NO
A;33
YES
ZERO LINE COUNTER
SKIP TO NEW PAGE
ADD 1 TO PAGE COUNTER
PRINT PAGE LINE
ADD 1 TO LINE COUNTER
B;33
C;33
END-LIST
CLOSE ALL
FILES
STOP

```
1010 IDENTIFICATION DIVISION.                                          SRCE   1
1020 PROGRAM-ID. 'SOURCE'.                                             SRCE   2
1030 AUTHOR. LARRY POTTER.                                             SRCE   3
1040 ENVIRONMENT DIVISION.                                             SRCE   4
1050 CONFIGURATION SECTION.                                            SRCE   5
1060 SOURCE-COMPUTER. IBM-360 H40.                                     SRCE   6
1070 OBJECT-COMPUTER. IBM-360 H40.                                     SRCE   7
1080 INPUT-OUTPUT SECTION.                                             SRCE   8
1090 FILE-CONTROL.                                                     SRCE   9
1100     SELECT SOURCE-IN ASSIGN TO 'OLD' UTILITY.                     SRCE  10
1110     SELECT SOURCE-OUT ASSIGN TO 'NEW' UTILITY.                    SRCE  11
1120     SELECT PRINT-LIST ASSIGN TO 'ERROR' UTILITY.                  SRCE  12
1130     SELECT SOURCE-TRAN ASSIGN TO 'TRANS' UTILITY.                 SRCE  13
1140 DATA DIVISION.                                                    SRCE  14
1150 FILE SECTION.                                                     SRCE  15
1160 FD  SOURCE-TRAN                                                   SRCE  16
1170     RECORDING MODE IS F                                           SRCE  17
1180     LABEL RECORDS ARE STANDARD                                    SRCE  18
1190     BLOCK CONTAINS 20 RECORDS                                     SRCE  19
1200     RECORD CONTAINS 80 CHARACTERS                                 SRCE  20
2010     DATA RECORDS ARE ACTION-REC, SOURCE-TRAN-RECS.                SRCE  21
2020 01  ACTION-REC.                                                   SRCE  22
2030     03  REGION-NO          PICTURE 999.                          SRCE  23
2040     03  ACTION-CODE        PICTURE A(6).                         SRCE  24
2050     03  ACTION             PICTURE X(20).                        SRCE  25
2060     03  FILLER             PICTURE X(51).                        SRCE  26
2070 01  SOURCE-TRAN-RECS.                                            SRCE  27
2080     03  PT1.                                                     SRCE  28
2090         05  PT1-ID.                                              SRCE  29
2100             07  PT1-REGION  PICTURE 999.                         SRCE  30
2110             07  PT1-SIC     PICTURE 9999.                        SRCE  31
2120             07  PT1-SITE    PICTURE 999.                         SRCE  32
2130             07  PT1-PROC-CD PICTURE 99.                          SRCE  33
2135         05  TRANS-ID REDEFINES PT1-ID PICTURE 9(12).             SRCE  34
2136         05  TRANSACTION-ID REDEFINES PT1-ID PICTURE X(12).       SRCE  35
2140         05  PT1-NAME           PICTURE X(23).                    SRCE  36
2150         05  PT1-LOC-X          PICTURE 999V9.                    SRCE  37
2155         05  PT1-LOCX     REDEFINES PT1-LOC-X PICTURE X(4).       SRCE  38
2160         05  PT1-LOC-Y          PICTURE 9(4)V9.                   SRCE  39
2165         05  PT1-LOCY     REDEFINES PT1-LOC-Y PICTURE X(5).       SRCE  40
2170         05  PT1-POL-JUR        PICTURE XX.                       SRCE  41
2180         05  PT1-OWNER          PICTURE A.                        SRCE  42
2190         05  PT1-SOURCE-TYPE PICTURE A.                           SRCE  43
2200         05  PT1-SO2-EMISS      PICTURE 9(4)V999.                 SRCE  44
2205         05  PT1-SO2EMISS REDEFINES PT1-SO2-EMISS PICTURE X(7).   SRCE  45
3010         05  PT1-PART-EMISS     PICTURE 9(4)V999.                 SRCE  46
3015         05  PT1-PARTEMISS REDEFINES PT1-PART-EMISS PICTURE X(7). SRCE  47
3020         05  PT1-OPERATE-TIM PICTURE 9(4)V.                       SRCE  48
3025         05  PT1-OPERTIM REDEFINES PT1-OPERATE-TIM PICTURE X(4).  SRCE  49
3030         05  PT1-SHIFTS         PICTURE 9V9.                      SRCE  50
3035         05  PT1SHIFTS REDEFINES PT1-SHIFTS PICTURE XX.           SRCE  51
3040         05  PT1-SO2-CON-EFF PICTURE 99V9.                        SRCE  52
3045         05  PT1SO2CON-EFF REDEFINES PT1-SO2-CON-EFF PICTURE X(3).SRCE  53
3050         05  PT1-PAR-CON-EFF PICTURE 99V99.                       SRCE  54
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3055          05  PT1PARCON-EFF REDEFINES PT1-PAR-CON-EFF PICTURE X(4).SRCE  55
3060          05  PT1-DEVICE-ID    PICTURE XXX.                        SRCE  56
3070          05  TRANS-CODE       PICTURE A.                          SRCE  57
3080          05  CARD-NO          PICTURE 9.                          SRCE  58
3090      03  PT2 REDEFINES PT1.                                       SRCE  59
3100          05  PT2-ID           PICTURE 9(12).                      SRCE  60
3110          05  PT2-RATED-CAPAC  PICTURE 9(5)V.                      SRCE  61
3115          05  PT2RATEDCAPAC REDEFINES PT2-RATED-CAPAC PICTURE X(4).SRCE  62
3120          05  PT2-COAL-HEAT    PICTURE 99V9.                       SRCE  63
3125          05  PT2COALHEAT REDEFINES PT2-COAL-HEAT PICTURE XXX.     SRCE  64
3130          05  PT2-DIST-OIL-HT PICTURE 999V9.                       SRCE  65
3135          05  PT2DISTOILHT REDEFINES PT2-DIST-OIL-HT PICTURE X(4). SRCE  66
3140          05  PT2-RESI-OIL-HT PICTURE 999V9.                       SRCE  67
3145          05  PT2RESIOILHT REDEFINES PT2-RESI-OIL-HT PICTURE X(4). SRCE  68
3150          05  PT2-GAS-HT       PICTURE 9(4)V.                      SRCE  69
3155          05  PT2GASHT     REDEFINES PT2-GAS-HT      PICTURE X(4). SRCE  70
3160          05  PT2-COAL-BURN    PICTURE 9(5)V.                      SRCE  71
3165          05  PT2COALBURN  REDEFINES PT2-COAL-BURN   PICTURE X(5). SRCE  72
3170          05  PT2-DIS-OIL-BRN PICTURE 9(6)V.                       SRCE  73
3175          05  PT2DISOILBRN REDEFINES PT2-DIS-OIL-BRN PICTURE X(6). SRCE  74
3180          05  PT2-RES-OIL-BRN PICTURE 9(6)V.                       SRCE  75
3185          05  PT2RESOILBRN REDEFINES PT2-RES-OIL-BRN PICTURE X(6). SRCE  76
3190          05  PT2-GAS-BURN     PICTURE 9(5)V.                      SRCE  77
3195          05  PT2GASBURN   REDEFINES PT2-GAS-BURN    PICTURE X(5). SRCE  78
3200          05  PT2-COAL-SULFUR PICTURE 9V99.                        SRCE  79
3205          05  PT2COALSULFUR REDEFINES PT2-COAL-SULFUR PICTURE XXX. SRCE  80
4010          05  PT2-DIS-OIL-SUL PICTURE 9V99.                        SRCE  81
4015          05  PT2DISOILSUL REDEFINES PT2-DIS-OIL-SUL PICTURE XXX.  SRCE  82
4020          05  PT2-RES-OIL-SUL PICTURE 9V99.                        SRCE  83
4025          05  PT2RESOILSUL REDEFINES PT2-RES-OIL-SUL PICTURE XXX.  SRCE  84
4030          05  PT2-GAS-SULFUR  PICTURE 9V9(4).                      SRCE  85
4035          05  PT2GASSULFUR REDEFINES PT2-GAS-SULFUR PICTURE X(5).  SRCE  86
4040          05  PT2-COAL-ASH     PICTURE 99V9.                       SRCE  87
4045          05  PT2COALASH   REDEFINES PT2-COAL-ASH    PICTURE XXX.  SRCE  88
4050          05  FILLER           PICTURE X(9).                       SRCE  89
4060      03  PT3 REDEFINES PT1.                                       SRCE  90
4070          05  PT3-ID           PICTURE 9(12).                      SRCE  91
4080          05  PT3-STACK-HGT    PICTURE 9(4)V.                      SRCE  92
4085          05  PT3STACKHGT  REDEFINES PT3-STACK-HGT  PICTURE X(4).  SRCE  93
4090          05  PT3-STACK-TEMP  PICTURE 9(4)V.                       SRCE  94
4095          05  PT3STACKTEMP REDEFINES PT3-STACK-TEMP PICTURE X(4).  SRCE  95
4100          05  PT3-PLUME-RISE  PICTURE 9(4)V.                       SRCE  96
4105          05  PT3PLUMERISE REDEFINES PT3-PLUME-RISE PICTURE X(4).  SRCE  97
4110          05  PT3-MAX-PROCESS PICTURE 9(6)V.                       SRCE  98
4115          05  PT3MXPROCESS REDEFINES PT3-MAX-PROCESS PICTURE X(6). SRCE  99
4120          05  PT3-MAX-EXHST    PICTURE 9(5)V.                      SRCE 100
4125          05  PT3MAXEXHST  REDEFINES PT3-MAX-EXHST  PICTURE X(5).  SRCE 101
4130          05  PT3-STACK-DIA    PICTURE 99V9.                       SRCE 102
4135          05  PT3STACKDIA  REDEFINES PT3-STACK-DIA  PICTURE XXX.   SRCE 103
4140          05  PT3-STACK-VEL    PICTURE 999V.                       SRCE 104
4145          05  PT3STACKVEL  REDEFINES PT3-STACK-VEL  PICTURE XXX.   SRCE 105
4150          05  PT3-USE-FACTOR  PICTURE 9V99.                        SRCE 106
4155          05  PT3USEFACTOR REDEFINES PT3-USE-FACTOR PICTURE XXX.   SRCE 107
4160          05  PT3-FILLER       PICTURE X(36).                      SRCE 108
4170      03  AREA-TRANS REDEFINES PT1.                                SRCE 109
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4180          05  AREA-ID.                                                    SRCE 110
4190              07  AT-REGION    PICTURE 999.                             SRCE 111
4200              07  AT-SIC       PICTURE 9(4).                            SRCE 112
5010                  88  ATSIC VALUE IS 9999.                             SRCE 113
5020              07  AT-SITE      PICTURE 9999.                            SRCE 114
5030              07  AT-PROC-CD   PICTURE 9.                               SRCE 115
5040                  88  ATPROC   VALUE IS 0.                             SRCE 116
5045          05  AT-ID REDEFINES AREA-ID  PICTURE 9(12).                   SRCE 117
5050          05  AT-LOC-X         PICTURE 999V9.                           SRCE 118
5055          05  AT-LOCX       REDEFINES AT-LOC-X        PICTURE X(4).   SRCE 119
5060          05  AT-LOC-Y         PICTURE 9(4)V9.                          SRCE 120
5065          05  AT-LOCY       REDEFINES AT-LOC-Y        PICTURE X(5).   SRCE 121
5070          05  AT-AREA          PICTURE 999V9.                           SRCE 122
5075          05  ATAREA        REDEFINES AT-AREA         PICTURE X(4).   SRCE 123
5080          05  AT-POL-JUR       PICTURE XX.                              SRCE 124
5090          05  AT-EFF-STK-HGT   PICTURE 9(4).                            SRCE 125
5095          05  ATEFFSTKHGT   REDEFINES AT-EFF-STK-HGT PICTURE X(4).     SRCE 126
5100          05  AT-SO2-EMISS     PICTURE 9(4)V999.                        SRCE 127
5105          05  ATSO2EMISS    REDEFINES AT-SO2-EMISS   PICTURE X(7).     SRCE 128
5110          05  AT-PART-EMISS    PICTURE 9(4)V999.                        SRCE 129
5115          05  ATPARTEMISS   REDEFINES AT-PART-EMISS  PICTURE X(7).     SRCE 130
5120          05  FILLER           PICTURE X(33).                           SRCE 131
5125          05  AT-CODES.                                                 SRCE 132
5130              07  AT-TRANS-CODE    PICTURE A.                           SRCE 133
5140              07  AT-CARD-NO       PICTURE X.                           SRCE 134
5150 FD   SOURCE-IN                                                        SRCE 135
5160      RECORDING MODE IS V                                              SRCE 136
5170      LABEL RECORDS ARE STANDARD                                       SRCE 137
5180      BLOCK CONTAINS 225 CHARACTERS                                    SRCE 138
5190      DATA RECORDS ARE DATE-REC, PT-SOURCE-IN,                         SRCE 139
5200      AREA-SOURCE-REC.                                                 SRCE 140
6010 01   DATE-REC.                                                        SRCE 141
6020      03  CREATE               PICTURE A(12).                          SRCE 142
6030      03  CREATE-DATE          PICTURE X(18).                          SRCE 143
6040      03  UPDATE               PICTURE A(13).                          SRCE 144
6050      03  UPDATE-DATE          PICTURE X(18).                          SRCE 145
6060      03  REGION               PICTURE A(8).                           SRCE 146
6070      03  REGION-NUMBER        PICTURE X(3).                           SRCE 147
6080      03  FILLER               PICTURE X(8).                           SRCE 148
6090 01   PT-SOURCE-IN.                                                   SRCE 149
6100      03  PT-REC1.                                                    SRCE 150
6110          05  POINT-ID.                                               SRCE 151
6120              07  PT-REGION    PICTURE 999.                           SRCE 152
6125              07  PT-IDENT.                                           SRCE 153
6130                  09  PT-SIC       PICTURE 9999.                      SRCE 154
6140                  09  PT-SITE      PICTURE 999.                       SRCE 155
6150                  09  PT-PRO-CODE  PICTURE 99.                        SRCE 156
6152              07  IDENT REDEFINES PT-IDENT PICTURE 9(9).              SRCE 157
6155          05  SOURCEIN-ID REDEFINES POINT-ID PICTURE 9(12).           SRCE 158
6160          05  PT-NAME          PICTURE X(23).                         SRCE 159
6170          05  PT-LOC-X         PICTURE 999V9.                         SRCE 160
6180          05  PT-LOC-Y         PICTURE 9(4)V9.                        SRCE 161
6190          05  PT-POL-JUR       PICTURE XX.                            SRCE 162
6200          05  PT-OWNER         PICTURE A.                             SRCE 163
7010          05  SOURCE-TYPE      PICTURE A.                             SRCE 164
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7020          05  SO2-EMISSION.      PICTURE 9(4)V999.          SRCE 165
7030          05  PARTIC-EMISSION    PICTURE 9(4)V999.          SRCE 166
7040          05  OPERATE-TIME       PICTURE 9(4)V.             SRCE 167
7050          05  SHIFTS             PICTURE 9V9.               SRCE 168
7060          05  SO2-CONT-EFF       PICTURE 99V9.              SRCE 169
7070          05  PARTIC-CONT-EFF    PICTURE 99V99.             SRCE 170
7080          05  DEVICE-ID          PICTURE XXX.               SRCE 171
7090      03  PT-REC2.                                          SRCE 172
7100          05  RATED-CAPACITY     PICTURE +9.9(5)E+99.       SRCE 173
7110          05  COAL-HEAT          PICTURE +9.9(3)E+99.       SRCE 174
7120          05  DIST-OIL-HEAT      PICTURE +9.9(4)E+99.       SRCE 175
7130          05  RESID-OIL-HEAT     PICTURE +9.9(4)E+99.       SRCE 176
7140          05  GAS-HEAT           PICTURE 9999V.             SRCE 177
7150          05  COAL-BURN          PICTURE 9(5)V.             SRCE 178
7160          05  DIST-OIL-BURN      PICTURE 9(6)V.             SRCE 179
7170          05  RESID-OIL-BURN     PICTURE 9(6)V.             SRCE 180
7180          05  GAS-BURN           PICTURE 9(8).              SRCE 181
7190          05  COAL-SULFUR        PICTURE 9V99.              SRCE 182
7200          05  DIST-OIL-SULFUR    PICTURE 9V99.              SRCE 183
8010          05  RESID-OIL-SULFR    PICTURE 9V99.              SRCE 184
8020          05  GAS-SULFUR         PICTURE 9V9(4).            SRCE 185
8030          05  COAL-ASH           PICTURE 99V9.              SRCE 186
8040      03  PT-REC3.                                          SRCE 187
8050          05  STACK-HGT          PICTURE 9(4)V999.          SRCE 188
8060          05  STACK-TEMP         PICTURE 9(4)V999.          SRCE 189
8070          05  PLUME-RISE         PICTURE 9(4)V999.          SRCE 190
8080          05  MAX-PROCESS        PICTURE 9(8).              SRCE 191
8090          05  MAX-EXHST          PICTURE 9(7).              SRCE 192
8100          05  STACK-DIA          PICTURE 99V9(5).           SRCE 193
8110          05  STACK-VEL          PICTURE 999V9(4).          SRCE 194
8120          05  USE-FACTOR         PICTURE 9V99.              SRCE 195
8130  01  AREA-SOURCE-REC.                                      SRCE 196
8140      03  IAREA-ID.                                         SRCE 197
8150          05  AR-REGION          PICTURE 999.               SRCE 198
8160          05  AR-SIC             PICTURE 9999.              SRCE 199
8170          05  AR-SITE            PICTURE 9999.              SRCE 200
8180          05  AR-PROC-CODE       PICTURE 9.                 SRCE 201
8185      03  AR-ID REDEFINES IAREA-ID  PICTURE 9(12).          SRCE 202
8190      03  AR-LOC-X               PICTURE 999V9.             SRCE 203
8200      03  AR-LOC-Y               PICTURE 9(4)V9.            SRCE 204
9010      03  AR-AREA                PICTURE 999V9.             SRCE 205
9020      03  AR-POL-JUR             PICTURE XX.                SRCE 206
9030      03  EFF-STACK-HGT          PICTURE 9(4)V999.          SRCE 207
9040      03  SO2-EMISSION           PICTURE 9(4)V999.          SRCE 208
9050      03  PART-EMISSION          PICTURE 9(4)V999.          SRCE 209
9060  FD  SOURCE-OUT                                           SRCE 210
9070      RECORDING MODE IS V                                  SRCE 211
9080      LABEL RECORDS ARE STANDARD                           SRCE 212
9090      BLOCK CONTAINS 225 CHARACTERS                        SRCE 213
9100      DATA RECORDS ARE DATE-REC-OUT, PT-SOURCE-OUT,        SRCE 214
9110      AREA-SOURCE-OUT, SOURCE-DUMMY.                       SRCE 215
9120  01  DATE-REC-OUT.                                       SRCE 216
9130      03  OCREATE                PICTURE A(12).             SRCE 217
9140      03  LCREATE-DATE           PICTURE X(18).             SRCE 218
9145      03  OCREATE-DATE REDEFINES LCREATE-DATE PICTURE X(18).  SRCE 219
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 9150      03  OUPDATE    .          PICTURE A(13).                          SRCE 220
 9160      03  LUPDATE-DATE          PICTURE X(18).                          SRCE 221
 9169      03  OUPDATE-DATE REDEFINES LUPDATE-DATE PICTURE X(18).            SRCE 222
 9170      03  OREGION    .          PICTURE A(8).                           SRCE 223
 9180      03  OREGION-NUMBER        PICTURE X(3).                           SRCE 224
 9190      03  FILLER                PICTURE X(8).                           SRCE 225
 9200  01  PT-SOURCE-OUT.                                                    SRCE 226
10010      03  PT-OUT1.                                                      SRCE 227
10020          05  LPOINT-ID.                                                SRCE 228
10030              07  OPT-REGION  PICTURE 999.                              SRCE 229
10040              07  OPT-SIC     PICTURE 9999.                             SRCE 230
10050              07  OPT-SITE    PICTURE 999.                              SRCE 231
10060              07  OPT-PRO-CDE PICTURE 99.                               SRCE 232
10063          05  OPOINT-ID REDEFINES LPOINT-ID PICTURE 9(12).              SRCE 233
10065          05  SOURCEOUT-ID REDEFINES OPOINT-ID PICTURE 9(12).           SRCE 234
10070          05  LPT-NAME          PICTURE X(23).                          SRCE 235
10075          05  OPT-NAME REDEFINES LPT-NAME PICTURE X(23).                SRCE 236
10080          05  LPT-LOC-X         PICTURE 999V9.                          SRCE 237
10085          05  OPT-LOC-X REDEFINES LPT-LOC-X PICTURE  999V9.             SRCE 238
10090          05  LPT-LOC-Y         PICTURE 9(4)V9.                         SRCE 239
10095          05  OPT-LOC-Y REDEFINES LPT-LOC-Y PICTURE  9(4)V9.            SRCE 240
10100          05  LPT-POL-JUR       PICTURE XX.                             SRCE 241
10105          05  OPT-POL-JUR REDEFINES  LPT-POL-JUR   PICTURE XX.          SRCE 242
10110          05  LPT-OWNER         PICTURE A.                              SRCE 243
10115          05  OPT-OWNER REDEFINES LPT-OWNER PICTURE  A.                 SRCE 244
10120          05  LSOURCE-TYPE      PICTURE A.                              SRCE 245
10125          05  OSOURCE-TYPE REDEFINES LSOURCE-TYPE PICTURE A.            SRCE 246
10130          05  LSO2-EMISS        PICTURE 9(4)V999.                       SRCE 247
10135          05  OSO2-EMISS REDEFINES LSO2-EMISS PICTURE 9(4)V999.         SRCE 248
10140          05  LPART-EMISS       PICTURE 9(4)V999.                       SRCE 249
10145          05  OPART-EMISS REDEFINES LPART-EMISS PICTURE 9(4)V999.       SRCE 250
10150          05  LOPERATE-TIME     PICTURE 9(4)V.                          SRCE 251
10155          05  OOPERATE-TIME REDEFINES LOPERATE-TIME                     SRCE 252
10156              PICTURE 9(4)V.                                             SRCE 253
10160          05  LSHIFTS           PICTURE 9V9.                            SRCE 254
10165          05  OSHIFTS REDEFINES  LSHIFTS     PICTURE 9V9.               SRCE 255
10170          05  LSO2EFF           PICTURE 99V9.                           SRCE 256
10175          05  OSO2EFF REDEFINES  LSO2EFF     PICTURE 99V9.              SRCE 257
10180          05  LPARTEFF          PICTURE 99V99.                          SRCE 258
10185          05  OPARTEFF REDEFINES LPARTEFF    PICTURE 99V99.             SRCE 259
10190          05  LDEVICE-ID        PICTURE XXX.                            SRCE 260
10195          05  ODEVICE-ID REDEFINES LDEVICE-ID PICTURE XXX.              SRCE 261
10200      03  PT-OUT2.                                                      SRCE 262
11010          05  LRATED-CAPCTY    PICTURE +9.9(5)E+99.                     SRCE 263
11015          05  ORATED-CAPACITY REDEFINES LRATED-CAPCTY                   SRCE 264
11016              PICTURE +9.9(5)E+99.                                       SRCE 265
11020          05  LCOAL-HEAT        PICTURE +9.999E+99.                     SRCE 266
11025          05  OCOAL-HEAT REDEFINES LCOAL-HEAT                           SRCE 267
11026              PICTURE +9.999E+99.                                        SRCE 268
11030          05  LOIST-OIL-HT      PICTURE +9.9(4)E+99.                    SRCE 269
11035          05  OOIST-OIL-HT REDEFINES LOIST-OIL-HT                       SRCE 270
11036              PICTURE +9.9(4)E+99.                                       SRCE 271
11040          05  LRESID-OIL-HT     PICTURE +9.9(4)E+99.                    SRCE 272
11045          05  ORESID-OIL-HT REDEFINES LRESID-OIL-HT                     SRCE 273
11046              PICTURE +9.9(4)E+99.                                       SRCE 274
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11050          05  LGAS-HEAT        PICTURE 9(4)V.                          SRCE 275
11055          05  OGAS-HEAT REDEFINES LGAS-HEAT PICTURE 9(4)V.             SRCE 276
11060          05  LCOAL-BURN       PICTURE 9(5)V.                          SRCE 277
11065          05  OCOAL-BURN REDEFINES LCOAL-BURN PICTURE  9(5)V.          SRCE 278
11070          05  LDIST-OIL-BURN   PICTURE 9(6)V.                          SRCE 279
11075          05  ODIST-OIL-BURN REDEFINES LDIST-OIL-BURN                  SRCE 280
11076              PICTURE 9(6)V.                                          SRCE 281
11080          05  LRESID-OIL-BURN PICTURE 9(6)V.                           SRCE 282
11085          05  ORESID-OIL-BURN REDEFINES LRESID-OIL-BURN                SRCE 283
11086              PICTURE 9(6)V.                                          SRCE 284
11090          05  LGAS-BURN        PICTURE 9(8).                           SRCE 285
11095          05  OGAS-BURN REDEFINES  LGAS-BURN PICTURE    9(5)000.     SRCE 286
11100          05  LCOAL-SULFUR     PICTURE 9V99.                           SRCE 287
11105          05  OCOAL-SULFUR REDEFINES LCOAL-SULFUR PICTURE  9V99.       SRCE 288
11110          05  LDIST-OIL-SULFR PICTURE 9V99.                            SRCE 289
11115          05  ODIST-OIL-SULFR REDEFINES LDIST-OIL-SULFR                SRCE 290
11116              PICTURE 9V99.                                           SRCE 291
11120          05  LRESID-OIL-SULF PICTURE 9V99.                            SRCE 292
11125          05  ORESID-OIL-SULF REDEFINES LRESID-OIL-SULF                SRCE 293
11126              PICTURE 9V99.                                           SRCE 294
11130          05  LGAS-SULFUR      PICTURE 9V9(4).                         SRCE 295
11135          05  OGAS-SULFUR REDEFINES LGAS-SULFUR PICTURE 9V9(4).        SRCE 296
11140          05  LCOAL-ASH        PICTURE 99V9.                           SRCE 297
11145          05  OCOAL-ASH REDEFINES  LCOAL-ASH PICTURE    99V9.          SRCE 298
11150      03  PT-OUT3.                                                     SRCE 299
11160          05  LSTACK-HGT       PICTURE 9(4)V999.                       SRCE 300
11165          05  OSTACK-HGT REDEFINES LSTACK-HGT PICTURE    9(4)V999.     SRCE 301
11170          05  LSTACK-TEMP      PICTURE 9(4)V999.                       SRCE 302
11175          05  OSTACK-TEMP REDEFINES LSTACK-TEMP PICTURE  9(4)V999.     SRCE 303
11180          05  LPLUME-RISE      PICTURE 9(4)V999.                       SRCE 304
11185          05  OPLUME-RISE REDEFINES LPLUME-RISE PICTURE  9(4)V999.     SRCE 305
11190          05  LMAX-PROCESS     PICTURE 9(8).                           SRCE 306
11195          05  OMAX-PROCESS REDEFINES LMAX-PROCESS PICTURE 9(6)00.      SRCE 307
11200          05  LMAX-EXHST       PICTURE 9(7).                           SRCE 308
11205          05  OMAX-EXHST REDEFINES LMAX-EXHST   PICTURE 9(5)00.        SRCE 309
12010          05  LSTACK-DIA       PICTURE 99V9(5).                        SRCE 310
12015          05  OSTACK-DIA REDEFINES LSTACK-DIA   PICTURE 99V9(5).       SRCE 311
12020          05  LSTACK-VEL       PICTURE 999V9(4).                       SRCE 312
12025          05  OSTACK-VEL REDEFINES LSTACK-VEL   PICTURE 999V9(4).      SRCE 313
12030          05  LUSE-FACTOR      PICTURE 9V99.                           SRCE 314
12035          05  OUSE-FACTOR REDEFINES LUSE-FACTOR  PICTURE 9V99.         SRCE 315
12040  01  AREA-SOURCE-OUT.                                                 SRCE 316
12050      03  LAREA-ID.                                                    SRCE 317
12060          05  OAR-REGION       PICTURE 999.                            SRCE 318
12070          05  OAR-SIC          PICTURE 9999.                           SRCE 319
12080          05  OAR-SITE         PICTURE 9999.                           SRCE 320
12090          05  OAR-PROC-CODE    PICTURE 9.                              SRCE 321
12095      03  OAREA-ID    REDEFINES LAREA-ID     PICTURE 9(12).           SRCE 322
12100      03  LAR-LOC-X             PICTURE 999V9,                         SRCE 323
12105      03  OAR-LOC-X   REDEFINES LAR-LOC-X    PICTURE 999V9,            SRCE 324
12110      03  LAR-LOC-Y             PICTURE 9(4)V9,                        SRCE 325
12115      03  OAR-LOC-Y   REDEFINES LAR-LOC-Y    PICTURE 9(4)V9,           SRCE 326
12120      03  LAR-AREA              PICTURE 999V9,                         SRCE 327
12125      03  OAR-AREA    REDEFINES LAR-AREA     PICTURE 999V9,            SRCE 328
12130      03  LAR-VAL-HUB           PICTURE XX.                            SRCE 329
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12135      03  DAR-POL-JUR REDEFINES LAR-POL-JUR  PICTURE XX.                SRCE 330
12140      03  LEFF-STACK-HGT       PICTURE 9(4)V999.                       SRCE 331
12145      03  OEFF-STACK-HGT  REDEFINES LEFF-STACK-HGT                     SRCE 332
12146              PICTURE 9(4)V999.                                         SRCE 333
12150      03  LSO2-EMISSION        PICTURE 9(4)V999.                       SRCE 334
12155      03  OSO2-EMISSION REDEFINES LSO2-EMISSION                        SRCE 335
12156              PICTURE 9(4)V999.                                         SRCE 336
12160      03  LPART-EMISSION       PICTURE 9(4)V999.                       SRCE 337
12165      03  OPART-EMISSION  REDEFINES LPART-EMISSION                     SRCE 338
12166              PICTURE 9(4)V999.                                         SRCE 339
12170 01   SOURCE-DUMMY             PICTURE X(221).                         SRCE 340
12180 FD   PRINT-LIST                                                       SRCE 341
12190      RECORDING MODE IS F                                             SRCE 342
12200      LABEL RECORDS ARE OMITTED                                       SRCE 343
13010      BLOCK CONTAINS 1 RECORDS                                        SRCE 344
13020      RECORD CONTAINS 133 CHARACTERS                                  SRCE 345
13030      DATA RECORD IS PRNT-LN.                                         SRCE 346
13040 01   PRNT-LN                   PICTURE X(133).                         SRCE 347
13050 WORKING-STORAGE SECTION.                                             SRCE 348
13060 77   THOUSAND                  PICTURE 9PPP  VALUE IS 1000.            SRCE 349
13070 77   MILLION                   PICTURE 9PPPPPP VALUE IS 1000000.       SRCE 350
13080 77   HUNDRED                   PICTURE 9PP     VALUE IS 100.           SRCE 351
13090 77   PG-CNTR                   PICTURE 9999  VALUE ZERO.               SRCE 352
13097 77   LINE-CNTR                 PICTURE S9(2) VALUE +0                  SRCE 353
13098                  USAGE COMPUTATIONAL.                                  SRCE 354
      77   LINE-10 PICTURE X(13) VALUE ' OUTPUT UNITS'.                      SRCE 355
13110 01   FLAG                      PICTURE X   VALUE SPACE.                SRCE 356
13120 01   PREVIOUS-ID               PICTURE 9(12)   VALUE IS ZERO.          SRCE 357
13125 01   SAVE-ERDES                PICTURE XX.                             SRCE 358
13130 01   DUMMY-REC.                                                        SRCE 359
13140      03  DUM-REGION            PICTURE 999.                            SRCE 360
13145      03  DUM-ID                PICTURE 9(9) VALUE 999900000.           SRCE 361
13160      03  FILLER                PICTURE X(209) VALUE SPACES.            SRCE 362
13190 01   ERROR-MSG.                                                        SRCE 363
13195      03  FILLER                PICTURE X   VALUE SPACE.                SRCE 364
13200      03  FM-MSG                PICTURE XX VALUE 'FM'.                  SRCE 365
13210      03  FM-NO                 PICTURE XX.                             SRCE 366
13220      03  FM-SOURCE             PICTURE X(8) VALUE ' SOURCE '.          SRCE 367
13230      03  FM-ID                 PICTURE X(12) VALUE SPACES.             SRCE 368
13240      03  FM-FIELD              PICTURE X(7) VALUE ' FIELD '.           SRCE 369
13250      03  FIELD-NO              PICTURE XX    VALUE SPACES.             SRCE 370
13255      03  FILLER                PICTURE X   VALUE SPACE.                SRCE 371
13260      03  FIELD                 PICTURE X(7) VALUE SPACES.              SRCE 372
13270      03  FILLER                PICTURE X VALUE SPACE.                  SRCE 373
13280      03  MSG-TEXT              PICTURE X(90) VALUE SPACES.             SRCE 374
13300 01   TITLE-1.                                                          SRCE 375
13302      03  FILLER                PICTURE X(41) VALUE SPACES.             SRCE 376
13304      03  TITLE                 PICTURE A(16) VALUE 'SOURCE FILE FOR    SRCE 377
13306          ''.                                                           SRCE 378
13308      03  LACTION                PICTURE X(20).                         SRCE 379
13310      03  REG                   PICTURE A(8)  VALUE ' REGION '.         SRCE 380
13312      03  LREGION-NO             PICTURE ZZZ.                           SRCE 381
13316      03  FILLER                PICTURE X(449) VALUE SPACES.            SRCE 382
13318 01   PAGE-LINE.                                                        SRCE 383
13319      03  FILLER                PICTURE X(1326) VALUE SPACES.           SRCE 384
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13320      03  PGE                  PICTURE A(5)  VALUE 'PAGE '.          SRCE 385
13322      03  PG-NO                PICTURE ZZZZ.                         SRCE 386
13324 01   TITLE-2.                                                       SRCE 387
13326      03  FILLER               PICTURE X(33) VALUE SPACES.           SRCE 388
13328      03  CR-DATE              PICTURE A(12) VALUE 'CREATE DATE '.   SRCE 389
13330      03  LCREATE-DATE          PICTURE X(18).                       SRCE 390
13332      03  UPD-DATE             PICTURE A(13) VALUE ' UPDATE DATE '.  SRCE 391
13334      03  LUPDATE-DATE          PICTURE X(18).                       SRCE 392
13336      03  FILLER               PICTURE X(39) VALUE SPACES.           SRCE 393
13340 01   TITLE-3.                                                       SRCE 394
13346      03  FILLER           PICTURE X(59) VALUE SPACES.               SRCE 395
13348      03  SOURCE-TITLE         PICTURE A(13) VALUE 'POINT SOURCES'.  SRCE 396
13350      03  FILLER               PICTURE X(61) VALUE SPACES.           SRCE 397
      01   TITLE-3A.                                                      SRCE 398
           03  FILLER  PICTURE X(39) VALUE '   NOTE. DATA GIVEN IN CONVESRCE 399
     -     'RTED UNITS.'.                                                 SRCE 400
           03  FILLER  PICTURE X(19) VALUE ' '.                           SRCE 401
           03  FILLER  PICTURE X(13) VALUE ' AREA SOURCES'.               SRCE 402
           03  FILLER  PICTURE X(61) VALUE ' '.                           SRCE 403
      01   TITLE-4.                                                       SRCE 404
           03  FILLER  PICTURE X(13) VALUE '   - - - - - '.               SRCE 405
           03  FILLER  PICTURE X(24) VALUE '     - - - - - - - -    '.    SRCE 406
           03  FILLER  PICTURE X(25) VALUE '  KM     KM   --   -    -'.   SRCE 407
           03  FILLER  PICTURE X(71) VALUE '   TONS/DAY TONS/DAY HRS/YR   SRCE 408
     -     '   -       %          %          ---          '.              SRCE 409
      01   TITLE-5.                                                       SRCE 410
           03  FILLER PICTURE X(120) VALUE '   BTU/HOUR    BTU/TON     BSRCE 411
     -     'TU/GAL     BTU/GAL  BTU/CU FT TON/DAY GAL/DAY GAL/DAY CU FT/SRCE 412
     -     'DAY    %       %       %       % '.                           SRCE 413
           03  FILLER PICTURE X(13) VALUE  '      %      '.               SRCE 414
      01   TITLE-6.                                                       SRCE 415
           03  FILLER PICTURE X(120) VALUE '     METERS                DEGSRCE 416
     -     ' K            M SQR/SEC        LB/HR              ACFM       SRCE 417
     -     '       METERS              M/SEC  '.                          SRCE 418
           03 FILLER PICTURE X(13) VALUE   '       --     '.               SRCE 419
13352 01   HEADER-1.                                                      SRCE 420
13354      03  FILLER ,             PICTURE X(3)  VALUE SPACES.           SRCE 421
13356      03  FLD-1                PICTURE A(14) VALUE 'SOURCE ID     '.SRCE 422
13358      03  FLD-2                PICTURE A(21) VALUE ' DESCRIPTIVE NAMSRCE 423
13360-     'E    '.                                                       SRCE 424
13362      03  FLD-3                PICTURE A(7)  VALUE 'LOC X  '.        SRCE 425
13364      03  FLD-4                PICTURE A(6)  VALUE 'LOC Y '.         SRCE 426
13366      03  FLD-5                PICTURE A(3)  VALUE 'PJ '.            SRCE 427
13368      03  FLD-6                PICTURE A(6)  VALUE 'OWNER '.         SRCE 428
13370      03  FLD-7                PICTURE A(5)  VALUE 'TYPE '.          SRCE 429
13372      03  FLD-8                PICTURE X(9)  VALUE 'SO2EMRAT '.      SRCE 430
13374      03  FLD-9                PICTURE A(9)  VALUE 'PARTEMRT '.      SRCE 431
13376      03  FLD-10               PICTURE A(8)  VALUE 'OP TIME '.       SRCE 432
13378      03  FLD-11               PICTURE A(7)  VALUE 'SHIFTS '.        SRCE 433
13380      03  FLD-12               PICTURE X(10) VALUE 'SO2CONEFF '.     SRCE 434
13382      03  FLD-13               PICTURE A(11) VALUE 'PARTCONEFF '.    SRCE 435
13384      03  FLD-14               PICTURE A(14) VALUE 'DEVICE ID     '.SRCE 436
13386 01   DATA-LN-1.                                                     SRCE 437
13388      03  FILLER               PICTURE X     VALUE SPACE.            SRCE 438
13390      03  LPOINT-ID             PICTURE X(12).                       SRCE 439
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13392      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 440
13394      03  LPT-NAME               PICTURE X(23).                      SRCE 441
13396      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 442
13398      03  LPT-LOC-X              PICTURE ZZZ.9.                      SRCE 443
13400      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 444
13402      03  LPT-LOC-Y              PICTURE ZZZZ.9.                     SRCE 445
13404      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 446
13406      03  LPT-POL-JUR            PICTURE XX.                         SRCE 447
13408      03  FILLER                PICTURE X(3)   VALUE SPACES.         SRCE 448
13410      03  LPT-OWNER              PICTURE A.                          SRCE 449
13412      03  FILLER                PICTURE X(4)   VALUE SPACES.         SRCE 450
13414      03  LSOURCE-TYPE           PICTURE A.                          SRCE 451
13416      03  FILLER                PICTURE X(3)   VALUE SPACES.         SRCE 452
13418      03  LSO2-EMISS             PICTURE ZZZZ.999.                   SRCE 453
13420      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 454
13422      03  LPART-EMISS            PICTURE ZZZZ.999.                   SRCE 455
13424      03  FILLER                PICTURE X(2)   VALUE SPACES.         SRCE 456
13426      03  LOPERATE-TIME          PICTURE ZZZ9.                       SRCE 457
13428      03  FILLER                PICTURE X(4)   VALUE SPACES.         SRCE 458
13430      03  LSHIFTS                PICTURE Z.9.                        SRCE 459
13432      03  FILLER                PICTURE X(5)   VALUE SPACES.         SRCE 460
13434      03  LSO2EFF               PICTURE ZZ.9.                       SRCE 461
13436      03  FILLER                PICTURE X(6)   VALUE SPACES.         SRCE 462
13438      03  LPARTEFF              PICTURE ZZ.99.                      SRCE 463
13440      03  FILLER                PICTURE X(7)   VALUE SPACES.         SRCE 464
13442      03  LDEVICE-ID             PICTURE XXX.                        SRCE 465
13444      03  FILLER                PICTURE X(8)   VALUE SPACES.         SRCE 466
13446 01   HEADER-2.                                                      SRCE 467
13448      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 468
13450      03  FLD-15                PICTURE A(14) VALUE 'RATED CAPCTY  '.SRCE 469
13452      03  FLD-16                PICTURE A(12) VALUE 'COAL HEAT   '.  SRCE 470
13454      03  FLD-17                PICTURE A(12) VALUE 'R OILHEAT   '.  SRCE 471
13456      03  FLD-18                PICTURE A(10) VALUE 'D OILHEAT '.    SRCE 472
13458      03  FLD-19                PICTURE A(8)  VALUE 'GASHEAT '.      SRCE 473
13460      03  FLD-20                PICTURE A(8)  VALUE 'COALBRN '.      SRCE 474
13462      03  FLD-21                PICTURE A(9)  VALUE 'R OILBRN '.     SRCE 475
13464      03  FLD-22                PICTURE A(9)  VALUE 'D OILBRN '.     SRCE 476
13466      03  FLD-23                PICTURE A(9)  VALUE 'GAS BRN  '.     SRCE 477
13468      03  FLD-24                PICTURE A(7)  VALUE 'COALSC '.       SRCE 478
13470      03  FLD-25                PICTURE A(8)  VALUE 'R OILSC '.      SRCE 479
13472      03  FLD-26                PICTURE A(8)  VALUE 'D OILSC '.      SRCE 480
13474      03  FLD-27                PICTURE A(7)  VALUE 'GAS SC '.       SRCE 481
13476      03  FLD-28                PICTURE A(11) VALUE 'COAL ASH    '.  SRCE 482
13478 01   DATA-LN-4.                                                     SRCE 483
13480      03  FILLER                PICTURE X      VALUE SPACE.          SRCE 484
13482      03  LAREA-ID               PICTURE X(12).                      SRCE 485
13484      03  FILLER                PICTURE X(2)   VALUE SPACES.         SRCE 486
13486      03  LAR-LOC-X              PICTURE ZZZ.9.                      SRCE 487
13488      03  FILLER                PICTURE X(5)   VALUE SPACES.         SRCE 488
13490      03  LAR-LOC-Y              PICTURE ZZZZ.9.                     SRCE 489
13492      03  FILLER                PICTURE X(7)   VALUE SPACES.         SRCE 490
13494      03  LAR-AREA               PICTURE ZZZ.9.                      SRCE 491
13496      03  FILLER                PICTURE X(6)   VALUE SPACES.         SRCE 492
13498      03  LAR-POL-JUR            PICTURE XX.                         SRCE 493
13500      03  FILLER                PICTURE X(10) VALUE SPACES.          SRCE 494
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13502      03  LEFF-STACK-DIA.          PICTURE ZZZZ.999.                    SRCE 495
13504      03  FILLER                  PICTURE X(17) VALUE SPACES.          SRCE 496
13506      03  LSO2-EMISSION            PICTURE ZZZZ.999.                    SRCE 497
13508      03  FILLER                  PICTURE X(17) VALUE SPACES.          SRCE 498
13510      03  LPART-EMISSION           PICTURE ZZZZ.999.                    SRCE 499
13512      03  FILLER                  PICTURE X(14) VALUE SPACES.          SRCE 500
13514 01   DATA-LN-3.                                                        SRCE 501
13516      03  FILLER                  PICTURE X(4)  VALUE SPACES.          SRCE 502
13518      03  LSTACK-HGT               PICTURE ZZZZ.999.                    SRCE 503
13520      03  FILLER                  PICTURE X(11) VALUE SPACES.          SRCE 504
13522      03  LSTACK-TEMP              PICTURE ZZZZ.999.                    SRCE 505
13524      03  FILLER                  PICTURE X(9)  VALUE SPACES.          SRCE 506
13526      03  LPLUME-RISE              PICTURE ZZZZ.999.                    SRCE 507
13528      03  FILLER                  PICTURE X(8)  VALUE SPACES.          SRCE 508
13530      03  LMAX-PROCESS             PICTURE Z(7)9.                       SRCE 509
13532      03  FILLER                  PICTURE X(11) VALUE SPACES.          SRCE 510
13534      03  LMAX-EXHST               PICTURE Z(6)9.                       SRCE 511
13536      03  FILLER                  PICTURE X(12) VALUE SPACES.          SRCE 512
13538      03  LSTACK-DIA               PICTURE ZZ.99999.                    SRCE 513
13540      03  FILLER                  PICTURE X(9)  VALUE SPACES.          SRCE 514
13542      03  LSTACK-VEL               PICTURE ZZZ.9999.                    SRCE 515
13544      03  FILLER                  PICTURE X(7)  VALUE SPACES.          SRCE 516
13546      03  LUSE-FACTOR              PICTURE Z.99.                        SRCE 517
13548      03  FILLER                  PICTURE X(2)  VALUE SPACES.          SRCE 518
13550 01   DASHED-LINE.                                                      SRCE 519
13552      03  FILLER                  PICTURE X     VALUE SPACE.           SRCE 520
13554      03  DASHES                  PICTURE X(119) VALUE       '- - - - -SRCE 521
13555-     ' - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -SRCE 522
13556-     ' - - - - - - - - - - - - - - - - - - - - - - - - - - - - -'.     SRCE 523
           03  FILLER PICTURE X(8) VALUE ' - - - -'.                        SRCE 524
13558 01   HEADER-4.                                                         SRCE 525
13560      03  FILLER                  PICTURE X(3)  VALUE SPACES.          SRCE 526
13562      03  FLD-37                  PICTURE A(11) VALUE 'SOURCE ID  '.   SRCE 527
13564      03  FLD-38                  PICTURE X(10) VALUE 'LOC X(K)  '.    SRCE 528
13566      03  FLD-39                  PICTURE X(11) VALUE 'LOC Y(K)   '.   SRCE 529
13568      03  FLD-40                  PICTURE X(14) VALUE 'AREA(SQ KM)   '.SRCE 530
13570      03  FLD-41                  PICTURE A(5)  VALUE 'PJ   '.         SRCE 531
13572      03  FLD-42                  PICTURE X(25) VALUE 'EFFECTIVE STACK SRCE 532
13574-     'HGT(M)   '.                                                      SRCE 533
13576      03  FLD-43                  PICTURE X(25) VALUE 'SO2 EMISSION RATSRCE 534
13578-     'E(T/D)   '.                                                      SRCE 535
13580      03  FLD-44                  PICTURE X(29) VALUE 'PART EMISSION RASRCE 536
13582-     'TE(T/D)     '.                                                   SRCE 537
13584 01   DATA-LN-2.                                                       SRCE 538
13586      03  FILLER                  PICTURE X     VALUE SPACE.           SRCE 539
13588      03  LRATED-CAPCTY            PICTURE +9.9(5)E+99.                 SRCE 540
13590      03  FILLER                  PICTURE X     VALUE SPACE.           SRCE 541
13592      03  LCOAL-HEAT               PICTURE +9.9(3)E+99.                 SRCE 542
13594      03  FILLER                  PICTURE X     VALUE SPACE.           SRCE 543
13596      03  LDIST-OIL-HT             PICTURE +9.9(4)E+99.                 SRCE 544
13598      03  FILLER                  PICTURE X     VALUE SPACE.           SRCE 545
13600      03  LRESID-OIL-HT            PICTURE +9.9(4)E+99.                 SRCE 546
13602      03  FILLER                  PICTURE X(2)  VALUE SPACES.          SRCE 547
13604      03  LGAS-HEAT                PICTURE ZZZ9.                        SRCE 548
13606      03  FILLER                  PICTURE X(4)  VALUE SPACES.          SRCE 549
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13608      03  LCOAL-BURN.          PICTURE ZZZZ9.                          SRCE 550
13610      03  FILLER               PICTURE X(3)  VALUE SPACES.             SRCE 551
13612      03  LDIST-OIL-BURN       PICTURE ZZZZZ9.                         SRCE 552
13614      03  FILLER               PICTURE X(3)  VALUE SPACES.             SRCE 553
13616      03  LRESID-OIL-BURN      PICTURE ZZZZZ9.                         SRCE 554
13618      03  FILLER               PICTURE X(2)  VALUE SPACES.             SRCE 555
13620      03  LGAS-BURN            PICTURE Z(7)9.                          SRCE 556
13622      03  FILLER               PICTURE X(2)  VALUE SPACES.             SRCE 557
13624      03  LCOAL-SULFUR         PICTURE Z.99.                           SRCE 558
13626      03  FILLER               PICTURE X(3)  VALUE SPACES.             SRCE 559
13628      03  LDIST-OIL-SULFR      PICTURE Z.99.                           SRCE 560
13630      03  FILLER               PICTURE X(4)  VALUE SPACES.             SRCE 561
13632      03  LRESID-OIL-SULF      PICTURE Z.99.                           SRCE 562
13634      03  FILLER               PICTURE X(3)  VALUE SPACES.             SRCE 563
13636      03  LGAS-SULFUR          PICTURE Z.9999.                         SRCE 564
13638      03  FILLER               PICTURE X(3)  VALUE SPACES.             SRCE 565
13640      03  LCOAL-ASH            PICTURE ZZ.9.                           SRCE 566
13642      03  FILLER               PICTURE X(5)  VALUE SPACES.             SRCE 567
13644  01  HEADER-3.                                                        SRCE 568
13646      03  FILLER               PICTURE X     VALUE SPACE.              SRCE 569
13648      03  FLD-29  PICTURE X(16) VALUE '  STACK HEIGHT  '.              SRCE 570
13652      03  FLD-30  PICTURE X(21) VALUE '  STACK TEMPERATURE  '.         SRCE 571
13656      03  FLD-31  PICTURE X(14) VALUE '  PLUME RISE  '.                SRCE 572
13658      03  FLD-32               PICTURE A(17) VALUE 'MAX PROCESS RATE'  SRCE 573
13660-     ' '.                                                            SRCE 574
13662      03  FLD-33  PICTURE X(22) VALUE '  MAX EXHAUST GAS VOL '.        SRCE 575
13666      03  FLD-34  PICTURE X(18) VALUE '  STACK DIAMETER  '.            SRCE 576
13670      03  FLD-35  PICTURE X(14) VALUE '  STACK VELOC '.                SRCE 577
13672      03  FLD-36               PICTURE A(10) VALUE '  USE FACT'.      SRCE 578
14010  PROCEDURE DIVISION.                                                 SRCE 579
14020  START.                                                              SRCE 580
14030      OPEN INPUT SOURCE-TRAN.                                         SRCE 581
14040      OPEN OUTPUT PRINT-LIST.                                         SRCE 582
14050      READ SOURCE-TRAN AT END GO TO NO-TRANS.                         SRCE 583
14060      IF ACTION-CODE IS EQUAL TO 'CREATE' GO TO CREATE-FILE.          SRCE 584
14070      IF ACTION-CODE IS EQUAL TO 'UPDATE' GO TO UPDATE-FILE.          SRCE 585
14080      IF ACTION-CODE IS EQUAL TO 'LIST  ' GO TO LIST-FILE ELSE        SRCE 586
14090      GO TO NO-ACTION-CD.                                             SRCE 587
14100  CREATE-FILE.                                                        SRCE 588
14105      OPEN OUTPUT SOURCE-OUT.                                         SRCE 589
14110      MOVE 'CREATE DATE ' TO OCREATE.                                 SRCE 590
14120      MOVE ACTION TO OCREATE-DATE.                                    SRCE 591
14130      MOVE ' UPDATE DATE ' TO OUPDATE.                                SRCE 592
14140      MOVE SPACES TO OUPDATE-DATE.                                    SRCE 593
14150      MOVE ' REGION ' TO OREGION.                                     SRCE 594
14160      MOVE REGION-NO TO OREGION-NUMBER.                               SRCE 595
14170      WRITE DATE-REC-OUT.                                             SRCE 596
14180  READ-TRAN1.                                                         SRCE 597
14190      READ SOURCE-TRAN AT END GO TO NO-SOURCE-DATA.                   SRCE 598
14200      IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO READ-TRAN1.        SRCE 599
14210      IF PT1-SIC =  9999 GO TO AREA-SOURCE1.                          SRCE 600
14300  CARD1-TEST.                                                         SRCE 601
14310      IF CARD-NO = 1 GO TO CARD1-EDIT, ELSE                           SRCE 602
14320          MOVE TRANS-ID TO PREVIOUS-ID PERFORM NO-CARD1               SRCE 603
14330          GO TO GET-NEW.                                              SRCE 604
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14340 CARD2-TEST.                                                       SRCE 605
14350     IF CARD-NO = 2 GO TO CARD2-EDIT, ELSE                         SRCE 606
14360         MOVE ZEROES TO PT-OUT2.                                   SRCE 607
14370, CARD3-TEST.                                                      SRCE 608
14380     IF CARD-NO = 3 GO TO CARD3-EDIT, ELSE                         SRCE 609
14390         MOVE TRANS-ID TO PREVIOUS-ID                              SRCE 610
14400         PERFORM NO-CARD3 GO TO GET-NEW.                           SRCE 611
14410 GET-NEW.                                                          SRCE 612
14420     READ SOURCE-TRAN AT END GO TO DUM-END.                        SRCE 613
14430     IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO GET-NEW.         SRCE 614
14440     IF PT1-SIC = 9999 GO TO AREA-SOURCE1.                         SRCE 615
14450     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                SRCE 616
14460     IF TRANS-ID = PREVIOUS-ID GO TO GET-NEW, ELSE                 SRCE 617
14470         GO TO CARD1-TEST.                                         SRCE 618
14480 READ-CARD2.                                                       SRCE 619
14490     READ SOURCE-TRAN AT END PERFORM NO-CARD3 GO TO DUM-END.       SRCE 620
14500     IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO READ-CARD2.      SRCE 621
14510     IF PT1-SIC = 9999 PERFORM NO-CARD3 GO TO AREA-SOURCE1.        SRCE 622
14520     IF TRANS-ID = PREVIOUS-ID GO TO CARD2-TEST.                   SRCE 623
14530     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                SRCE 624
14540     MOVE TRANS-ID TO PREVIOUS-ID PERFORM NO-CARD3                 SRCE 625
14550         GO TO CARD1-TEST.                                         SRCE 626
14560 READ-CARD3.                                                       SRCE 627
14570     READ SOURCE-TRAN AT END PERFORM NO-CARD3 GO TO DUM-END.       SRCE 628
14580     IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO READ-CARD3.      SRCE 629
14590     IF PT1-SIC = 9999 PERFORM NO-CARD3 GO TO AREA-SOURCE1.        SRCE 630
14600     IF TRANS-ID = PREVIOUS-ID GO TO CARD3-TEST.                   SRCE 631
14610     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                SRCE 632
14620     MOVE TRANS-ID TO PREVIOUS-ID PERFORM NO-CARD3                 SRCE 633
14630         GO TO CARD1-TEST.                                         SRCE 634
15050 CARD1-EDIT.                                                       SRCE 635
15060     MOVE TRANS-ID TO PREVIOUS-ID,   OPOINT-ID.                    SRCE 636
15070     IF PT1-NAME  = SPACE GO TO NO-NAME1 ELSE MOVE PT1-NAME TO     SRCE 637
15080        OPT-NAME GO TO LOCATION-X.                                 SRCE 638
15089 LOCATION-X.                                                       SRCE 639
15090     IF PT1-LOCX  = SPACE GO TO BLANK-FIELD-6.                     SRCE 640
15100     EXAMINE PT1-LOCX REPLACING LEADING SPACES BY ZEROS.           SRCE 641
15110     IF PT1-LOC-X NOT NUMERIC GO TO NOT-NUMERIC-6 ELSE             SRCE 642
15120        MOVE PT1-LOC-X TO OPT-LOC-X GO TO LOCATION-Y.              SRCE 643
15122 NOT-NUMERIC-6.                                                    SRCE 644
15124     MOVE '06' TO FIELD-NO.                                        SRCE 645
15126     MOVE PT1-LOCX TO FIELD.                                       SRCE 646
15128     PERFORM NOT-NUMERIC.                                          SRCE 647
15129 LOCATION-Y.                                                       SRCE 648
15130     IF PT1-LOCY  = SPACE GO TO BLANK-FIELD-7.                     SRCE 649
15140     EXAMINE PT1-LOCY REPLACING LEADING SPACES BY ZEROS.           SRCE 650
15150     IF PT1-LOC-Y NOT NUMERIC GO TO NOT-NUMERIC-7 ELSE             SRCE 651
15160        MOVE PT1-LOC-Y TO OPT-LOC-Y GO TO POLIT-JUR.               SRCE 652
15162 NOT-NUMERIC-7.                                                    SRCE 653
15164     MOVE '07' TO FIELD-NO.                                        SRCE 654
15166     MOVE PT1-LOCY TO FIELD.                                       SRCE 655
15168     PERFORM NOT-NUMERIC.                                          SRCE 656
15169 POLIT-JUR.                                                        SRCE 657
15170     IF PT1-POL-JUR  = SPACE GO TO BLANK-FIELD-8 ELSE              SRCE 658
15180        MOVE PT1-POL-JUR TO OPT-POL-JUR GO TO OWNERSHIP.           SRCE 659
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15182 BLANK-FIELD-8.                                                    SRCE 660
15184     MOVE '08' TO FIELD-NO.                                        SRCE 661
15188     PERFORM BLANK-FIELD.                                          SRCE 662
15189 OWNERSHIP.                                                        SRCE 663
15190     IF PT1-OWNER  = 'F' MOVE 'F' TO OPT-OWNER, GO TO TEST-TYPE.   SRCE 664
15200     IF PT1-OWNER  = 'L' MOVE 'L' TO OPT-OWNER, GO TO TEST-TYPE.   SRCE 665
16010     IF PT1-OWNER  = 'P' MOVE 'P' TO OPT-OWNER, GO TO TEST-TYPE.   SRCE 666
16020     IF PT1-OWNER  = 'S' MOVE 'S' TO OPT-OWNER, GO TO TEST-TYPE.   SRCE 667
16030     IF PT1-OWNER NOT EQUAL TO 'U' GO TO NO-OWNER, ELSE            SRCE 668
16040        MOVE 'U' TO OPT-OWNER.                                     SRCE 669
16050 TEST-TYPE.                                                        SRCE 670
16060     IF PT1-SOURCE-TYPE = 'B' MOVE 'B' TO OSOURCE-TYPE GO TO       SRCE 671
16062         SO2-EM.                                                   SRCE 672
16070     IF PT1-SOURCE-TYPE = 'P' MOVE 'P' TO OSOURCE-TYPE GO TO       SRCE 673
16072         SO2-EM.                                                   SRCE 674
16080     IF PT1-SOURCE-TYPE NOT = 'S' GO TO NO-TYPE, ELSE              SRCE 675
16090        MOVE 'S' TO OSOURCE-TYPE.                                  SRCE 676
16100 SO2-EM.                                                           SRCE 677
16110     IF PT1-SO2EMISS  = SPACES GO TO TEST-PART ELSE                SRCE 678
16120         EXAMINE PT1-SO2EMISS REPLACING LEADING SPACES BY ZEROS.   SRCE 679
16130     IF PT1-SO2-EMISS NOT NUMERIC GO TO NOT-NUMERIC-11 ELSE        SRCE 680
16140        MOVE PT1-SO2-EMISS TO OSO2-EMISS    GO TO PART-EM.         SRCE 681
16150 TEST-PART.  IF PT1-PARTEMISS = SPACES GO TO BLANK-FIELDS-12        SRCE 682
16160        ELSE MOVE ZEROS TO OSO2-EMISS    GO TO PART-EM.           SRCE 683
16162 NOT-NUMERIC-11.                                                   SRCE 684
16164     MOVE '11' TO FIELD-NO.                                        SRCE 685
16166     MOVE PT1-SO2EMISS TO FIELD.                                   SRCE 686
16169     PERFORM NOT-NUMERIC.                                          SRCE 687
16170 PART-EM.                                                          SRCE 688
16180     IF PT1-PARTEMISS = SPACES MOVE ZEROS TO OPART-EMISS GO TO     SRCE 689
16190     OP-TIME ELSE EXAMINE PT1-PARTEMISS REPLACING LEADING SPACES   SRCE 690
16200         BY ZEROS.                                                 SRCE 691
16210     IF PT1-PART-EMISS NOT NUMERIC GO TO NOT-NUMERIC-12 ELSE       SRCE 692
17010        MOVE PT1-PART-EMISS TO OPART-EMISS    GO TO OP-TIME.       SRCE 693
17012 NOT-NUMERIC-12.                                                   SRCE 694
17014     MOVE '12' TO FIELD-NO.                                        SRCE 695
17016     MOVE PT1-PARTEMISS TO FIELD.                                  SRCE 696
17019     PERFORM NOT-NUMERIC.                                          SRCE 697
17020 OP-TIME.                                                          SRCE 698
17030     IF PT1-OPERTIM = SPACES MOVE ZEROS TO OOPERATE-TIME GO TO     SRCE 699
17040     SHIFT. EXAMINE PT1-OPERTIM REPLACING LEADING SPACES BY ZEROS. SRCE 700
17050     IF PT1-OPERATE-TIM NOT NUMERIC GO TO NOT-NUMERIC-13 ELSE      SRCE 701
17060        MOVE  PT1-OPERATE-TIM TO OCPERATE-TIME GO TO SHIFT.        SRCE 702
17062 NOT-NUMERIC-13.                                                   SRCE 703
17064     MOVE '13' TO FIELD-NO.                                        SRCE 704
17066     MOVE PT1-OPERTIM TO FIELD.                                    SRCE 705
17069     PERFORM NOT-NUMERIC.                                          SRCE 706
17070 SHIFT.                                                            SRCE 707
17080     IF PT1SHIFTS = SPACES GO TO BLANK-FIELD-14.                   SRCE 708
17085     IF PT1SHIFTS = ZEROES GO TO BLANK-FIELD-14.                   SRCE 709
17090         EXAMINE PT1SHIFTS REPLACING LEADING SPACES BY ZEROS.      SRCE 710
17100     IF  PT1-SHIFTS NOT NUMERIC GO TO NOT-NUMERIC-14 ELSE          SRCE 711
17110        MOVE PT1-SHIFTS TO OSHIFTS GO TO SO2-CONTROL.              SRCE 712
17112 NOT-NUMERIC-14.                                                   SRCE 713
17114     MOVE '14' TO FIELD-NO.                                        SRCE 714
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17116      MOVE PT1SHIFTS TO FIELD.                                          SRCE 715
17119      PERFORM NOT-NUMERIC.                                              SRCE 716
17120 SO2-CONTROL.                                                           SRCE 717
17130      IF PT1SO2CON-EFF = SPACE MOVE ZERO TO OSO2EFF GO TO PRT-CONT.     SRCE 718
17140          EXAMINE PT1SO2CON-EFF REPLACING LEADING SPACES BY ZEROS.      SRCE 719
17150      IF PT1-SO2-CON-EFF NOT NUMERIC GO TO NOT-NUMERIC-15 ELSE          SRCE 720
17160         MOVE PT1-SO2-CON-EFF TO OSO2EFF       GO TO PRT-CONT.         SRCE 721
17162 NOT-NUMERIC-15.                                                        SRCE 722
17164      MOVE '15' TO FIELD-NO.                                            SRCE 723
17166      MOVE PT1SO2CON-EFF TO FIELD.                                      SRCE 724
17169      PERFORM NOT-NUMERIC.                                              SRCE 725
17170 PRT-CONT.                                                              SRCE 726
17180      IF PT1PARCON-EFF = SPACE MOVE ZERO TO OPARTEFF GO TO DEVICE.      SRCE 727
17190          EXAMINE PT1PARCON-EFF REPLACING LEADING SPACES BY ZEROS.      SRCE 728
17200      IF PT1-PAR-CON-EFF NOT NUMERIC GO TO NOT-NUMERIC-16 ELSE          SRCE 729
18010         MOVE PT1-PAR-CON-EFF TO OPARTEFF       GO TO DEVICE.          SRCE 730
18012 NOT-NUMERIC-16.                                                        SRCE 731
18014      MOVE '16' TO FIELD-NO.                                            SRCE 732
18016      MOVE PT1PARCON-EFF TO FIELD.                                      SRCE 733
18019      PERFORM NOT-NUMERIC.                                              SRCE 734
18020 DEVICE.                                                                SRCE 735
18030      MOVE PT1-DEVICE-ID TO ODEVICE-ID.                                 SRCE 736
18032 GO-BACK1.                                                              SRCE 737
18034      GO TO READ-CARD2.                                                 SRCE 738
18040 CARD2-EDIT.                                                            SRCE 739
18050      MOVE TRANS-ID TO PREVIOUS-ID, OPOINT-ID.                          SRCE 740
18060 R-CAPACITY.                                                            SRCE 741
18070      IF PT2RATEDCAPAC = SPACES MOVE ZEROS TO ORATED-CAPACITY GO TO     SRCE 742
18080          COALHEAT.                                                     SRCE 743
18090      EXAMINE PT2RATEDCAPAC REPLACING LEADING SPACES BY ZEROS.          SRCE 744
18100      IF PT2-RATED-CAPAC NOT NUMERIC GO TO NOT-NUMERIC-24 ELSE          SRCE 745
18110          MULTIPLY PT2-RATED-CAPAC BY MILLION GIVING                    SRCE 746
18120          ORATED-CAPACITY GO TO COALHEAT.                               SRCE 747
18122 NOT-NUMERIC-24.                                                        SRCE 748
18124      MOVE '24' TO FIELD-NO.                                            SRCE 749
18126      MOVE PT2RATEDCAPAC TO FIELD.                                      SRCE 750
18129      PERFORM NOT-NUMERIC.                                              SRCE 751
18130 COALHEAT.                                                              SRCE 752
18140      IF PT2COALHEAT = SPACES MOVE ZEROS TO OCOAL-HEAT GO TO            SRCE 753
18150          DISOILHEAT.                                                   SRCE 754
18160      EXAMINE PT2COALHEAT REPLACING LEADING SPACES BY ZEROS.            SRCE 755
18170      IF PT2-COAL-HEAT NOT NUMERIC GO TO NOT-NUMERIC-25 ELSE            SRCE 756
18180          MULTIPLY PT2-COAL-HEAT BY MILLION GIVING OCOAL-HEAT GO TO     SRCE 757
18190          DISOILHEAT.                                                   SRCE 758
18192 NOT-NUMERIC-25.                                                        SRCE 759
18194      MOVE '25' TO FIELD-NO.                                            SRCE 760
18196      MOVE PT2COALHEAT   TO FIELD.                                      SRCE 761
18199      PERFORM NOT-NUMERIC.                                              SRCE 762
18200 DISOILHEAT.                                                            SRCE 763
19010      IF PT2DISTOILHT = SPACES MOVE ZEROS TO ODIST-OIL-HT   GO TO       SRCE 764
19020          RESOILHEAT.                                                   SRCE 765
19030      EXAMINE PT2DISTOILHT REPLACING LEADING SPACES BY ZEROS.           SRCE 766
19040      IF PT2-DIST-OIL-HT NOT NUMERIC GO TO NOT-NUMERIC-26 ELSE          SRCE 767
19050          MULTIPLY PT2-DIST-OIL-HT BY THOUSAND GIVING ODIST-OIL-HT      SRCE 768
19060          GO TO RESOILHEAT.                                             SRCE 769
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19062 NOT-NUMERIC-26.                                                  SRCE 770
19064     MOVE '26' TO FIELD-NO.                                       SRCE 771
19066     MOVE PT2DISTOILHT  TO FIELD.                                 SRCE 772
19069     PERFORM NOT-NUMERIC.                                         SRCE 773
19070 RESOILHEAT.                                                      SRCE 774
19080     IF PT2RESIOILHT = SPACES MOVE ZEROS TO ORESID-OIL-HT GO TO   SRCE 775
19090         GASHEAT.                                                 SRCE 776
19100     EXAMINE PT2RESIOILHT REPLACING LEADING SPACES BY ZEROS.      SRCE 777
19110     IF PT2-RESI-OIL-HT NOT NUMERIC GO TO NOT-NUMERIC-27 ELSE     SRCE 778
19120         MULTIPLY PT2-RESI-OIL-HT BY THOUSAND GIVING ORESID-OIL-HTSRCE 779
19130         GO TO GASHEAT.                                           SRCE 780
19132 NOT-NUMERIC-27.                                                  SRCE 781
19134     MOVE '27' TO FIELD-NO.                                       SRCE 782
19136     MOVE PT2RESIOILHT  TO FIELD.                                 SRCE 783
19139     PERFORM NOT-NUMERIC.                                         SRCE 784
19140 GASHEAT.                                                         SRCE 785
19150     IF PT2GASHT = SPACES MOVE ZEROS TO OGAS-HEAT GO TO COALBURN. SRCE 786
19160     EXAMINE PT2GASHT REPLACING LEADING SPACES BY ZEROS.          SRCE 787
19170     IF PT2-GAS-HT NOT NUMERIC GO TO NOT-NUMERIC-28 ELSE          SRCE 788
19180         MOVE PT2-GAS-HT TO OGAS-HEAT GO TO COALBURN.             SRCE 789
19182 NOT-NUMERIC-29.                                                  SRCE 790
19184     MOVE '28' TO FIELD-NO.                                       SRCE 791
19186     MOVE PT2GASHT      TO FIELD.                                 SRCE 792
19189     PERFORM NOT-NUMERIC.                                         SRCE 793
19190 COALBURN.                                                        SRCE 794
19200     IF PT2COALBURN = SPACES MOVE ZEROS TO OCOAL-BURN GO TO       SRCE 795
20010         DISOILBURN.                                              SRCE 796
20020     EXAMINE PT2COALBURN REPLACING LEADING SPACES BY ZEROS.       SRCE 797
20030     IF PT2-COAL-BURN NOT NUMERIC GO TO NOT-NUMERIC-29 ELSE       SRCE 798
20040         MOVE PT2-COAL-BURN TO OCOAL-BURN GO TO DISOILBURN.       SRCE 799
20042 NOT-NUMERIC-29.                                                  SRCE 800
20044     MOVE '29' TO FIELD-NO.                                       SRCE 801
20046     MOVE PT2COALBURN   TO FIELD.                                 SRCE 802
20049     PERFORM NOT-NUMERIC.                                         SRCE 803
20050 DISOILBURN.                                                      SRCE 804
20060     IF PT2DISOILBRN = SPACES MOVE ZEROS TO ODIST-OIL-BURN GO TO  SRCE 805
20070         RESOILBURN.                                              SRCE 806
20080     EXAMINE PT2DISOILBRN REPLACING LEADING SPACES BY ZEROS.      SRCE 807
20090     IF PT2-DIS-OIL-BRN NOT NUMERIC GO TO NOT-NUMERIC-30 ELSE     SRCE 808
20100         MOVE PT2-DIS-OIL-BRN TO ODIST-OIL-BURN GO TO RESOILBURN. SRCE 809
20102 NOT-NUMERIC-30.                                                  SRCE 810
20104     MOVE '30' TO FIELD-NO.                                       SRCE 811
20106     MOVE PT2DISOILBRN  TO FIELD.                                 SRCE 812
20109     PERFORM NOT-NUMERIC.                                         SRCE 813
20110 RESOILBURN.                                                      SRCE 814
20120     IF PT2RESOILBRN = SPACES MOVE ZEROS TO ORESID-OIL-BURN GO TO SRCE 815
20130         GASBURN.                                                 SRCE 816
20140     EXAMINE PT2RESOILBRN REPLACING LEADING SPACES BY ZEROS.      SRCE 817
20150     IF PT2-RES-OIL-BRN NOT NUMERIC GO TO NOT-NUMERIC-31 ELSE     SRCE 818
20160         MOVE PT2-RES-OIL-BRN TO ORESID-OIL-BURN GO TO GASBURN.   SRCE 819
20162 NOT-NUMERIC-31.                                                  SRCE 820
20164     MOVE '31' TO FIELD-NO.                                       SRCE 821
20166     MOVE PT2RESOILBRN  TO FIELD.                                 SRCE 822
20169     PERFORM NOT-NUMERIC.                                         SRCE 823
20170 GASBURN.                                                         SRCE 824
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20180      IF PT2GASBURN = SPACES MOVE ZEROS TO OGAS-BURN GO TO          SRCE 825
20190          COALSULFUR.                                               SRCE 826
20200      EXAMINE PT2GASBURN REPLACING LEADING SPACES BY ZEROS.         SRCE 827
21010      IF PT2-GAS-BURN NOT NUMERIC GO TO NOT-NUMERIC-32 ELSE         SRCE 828
21020          MOVE PT2-GAS-BURN TO OGAS-BURN.                           SRCE 829
21030      GO TO COALSULFUR.                                             SRCE 830
21032 NOT-NUMERIC-32.                                                    SRCE 831
21034      MOVE '32' TO FIELD-NO.                                        SRCE 832
21036      MOVE PT2GASBURN    TO FIELD.                                  SRCE 833
21039      PERFORM NOT-NUMERIC.                                          SRCE 834
21040 COALSULFUR.                                                        SRCE 835
21050      IF PT2COALSULFUR = SPACES MOVE ZEROS TO OCOAL-SULFUR GO TO    SRCE 836
21060          DISOILSULFUR.                                             SRCE 837
21070      EXAMINE PT2COALSULFUR REPLACING LEADING SPACES BY ZEROS.      SRCE 838
21080      IF PT2-COAL-SULFUR NOT NUMERIC GO TO NOT-NUMERIC-33 ELSE      SRCE 839
21090          MOVE PT2-COAL-SULFUR TO OCOAL-SULFUR GO TO DISOILSULFUR.  SRCE 840
21092 NOT-NUMERIC-33.                                                    SRCE 841
21094      MOVE '33' TO FIELD-NO.                                        SRCE 842
21096      MOVE PT2COALSULFUR TO FIELD.                                  SRCE 843
21099      PERFORM NOT-NUMERIC.                                          SRCE 844
21100 DISOILSULFUR.                                                      SRCE 845
21110      IF PT2DISOILSUL = SPACES MOVE ZEROS TO ODIST-OIL-SULFR GO TO  SRCE 846
21120          RESOILSULFUR.                                             SRCE 847
21130      EXAMINE PT2DISOILSUL REPLACING LEADING SPACES BY ZEROS.       SRCE 848
21140      IF PT2-DIS-OIL-SUL NOT NUMERIC GO TO NOT-NUMERIC-34 ELSE      SRCE 849
21150          MOVE PT2-DIS-OIL-SUL TO ODIST-OIL-SULFR GO TO             SRCE 850
21160          RESOILSULFUR.                                             SRCE 851
21162 NOT-NUMERIC-34.                                                    SRCE 852
21164      MOVE '34' TO FIELD-NO.                                        SRCE 853
21166      MOVE PT2DISOILSUL  TO FIELD.                                  SRCE 854
21169      PERFORM NOT-NUMERIC.                                          SRCE 855
21170 RESOILSULFUR.                                                      SRCE 856
21180      IF PT2RESOILSUL = SPACES MOVE ZEROS TO ORESID-OIL-SULF GO TO  SRCE 857
21190          GASSULFUR.                                                SRCE 858
21200      EXAMINE PT2RESOILSUL REPLACING LEADING SPACES BY ZEROS.       SRCE 859
22010      IF PT2-RES-OIL-SUL NOT NUMERIC GO TO NOT-NUMERIC-35 ELSE      SRCE 860
22020          MOVE PT2-RES-OIL-SUL TO ORESID-OIL-SULF GO TO GASSULFUR.  SRCE 861
22022 NOT-NUMERIC-35.                                                    SRCE 862
22024      MOVE '35' TO FIELD-NO.                                        SRCE 863
22026      MOVE PT2RESOILSUL  TO FIELD.                                  SRCE 864
22029      PERFORM NOT-NUMERIC.                                          SRCE 865
22030 GASSULFUR.                                                         SRCE 866
22040      IF PT2GASSULFUR = SPACES MOVE ZEROS TO OGAS-SULFUR GO TO      SRCE 867
22050          COALASH.                                                  SRCE 868
22060      EXAMINE PT2GASSULFUR REPLACING LEADING SPACES BY ZEROS.       SRCE 869
22070      IF PT2-GAS-SULFUR NOT NUMERIC GO TO NOT-NUMERIC-36 ELSE       SRCE 870
22080          MOVE PT2-GAS-SULFUR TO OGAS-SULFUR GO TO COALASH.         SRCE 871
22082 NOT-NUMERIC-36.                                                    SRCE 872
22084      MOVE '36' TO FIELD-NO.                                        SRCE 873
22086      MOVE PT2GASSULFUR  TO FIELD.                                  SRCE 874
22089      PERFORM NOT-NUMERIC.                                          SRCE 875
22090 COALASH.                                                           SRCE 876
22100      IF PT2COALASH = SPACES MOVE ZEROS TO OCOAL-ASH GO TO          SRCE 877
22110          NOP1.                                                     SRCE 878
22120      EXAMINE PT2COALASH REPLACING LEADING SPACES BY ZEROS.         SRCE 879
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22130      IF PT2-COAL-ASH NOT NUMERIC GO TO NOT-NUMERIC-37 ELSE          SRCE 880
22134          MOVE PT2-COAL-ASH TO OCOAL-ASH.                            SRCE 891
22135 NOP1.  MOVE SPACE TO PRNT-LN.                                       SRCE 882
22136 GO-BACK2.                                                           SRCE 883
22138      GO TO READ-CARD3.                                              SRCE 884
22142 NOT-NUMERIC-37.                                                     SRCE 885
22144      MOVE '37' TO FIELD-NO.                                         SRCE 886
22146      MOVE PT2COALASH    TO FIELD.                                   SRCE 887
22148      PERFORM NOT-NUMERIC.                                           SRCE 888
22149      GO TO NOP1.                                                    SRCE 889
22150 CARD3-EDIT.                                                         SRCE 890
22160      MOVE TRANS-ID TO PREVIOUS-ID, OPOINT-ID.                       SRCE 891
22170 STACKHGT.                                                           SRCE 892
22180      IF PT3STACKHGT = SPACES MOVE ZEROS TO OSTACK-HGT GO TO         SRCE 893
22190          STACKTEMP.                                                 SRCE 894
22200      EXAMINE PT3STACKHGT REPLACING LEADING SPACES BY ZEROS.         SRCE 895
23010      IF PT3-STACK-HGT NOT NUMERIC GO TO NOT-NUMERIC-44 ELSE         SRCE 896
23020          COMPUTE OSTACK-HGT = PT3-STACK-HGT * .3048.                SRCE 897
23030      GO TO STACKTEMP.                                               SRCE 898
23032 NOT-NUMERIC-44.                                                     SRCE 899
23034      MOVE '44' TO FIELD-NO.                                         SRCE 900
23036      MOVE PT3STACKHGT   TO FIELD.                                   SRCE 901
23039      PERFORM NOT-NUMERIC.                                           SRCE 902
23040 STACKTEMP.                                                          SRCE 903
23050      IF PT3STACKTEMP = SPACES MOVE ZEROS TO PT3-STACK-TEMP.         SRCE 904
23070      EXAMINE PT3STACKTEMP REPLACING LEADING SPACES BY ZEROS.        SRCE 905
23080      IF PT3-STACK-TEMP NOT NUMERIC GO TO NOT-NUMERIC-45 ELSE        SRCE 906
23090          COMPUTE OSTACK-TEMP = PT3-STACK-TEMP * .556 + 255.2.       SRCE 907
23100      GO TO PLUMERISE.                                               SRCE 908
23102 NOT-NUMERIC-45.                                                     SRCE 909
23104      MOVE '45' TO FIELD-NO.                                         SRCE 910
23106      MOVE PT3STACKTEMP  TO FIELD.                                   SRCE 911
23109      PERFORM NOT-NUMERIC.                                           SRCE 912
23110 PLUMERISE.                                                          SRCE 913
23120      IF PT3PLUMERISE = SPACES MOVE ZEROS TO OPLUME-RISE GO TO       SRCE 914
23130          MAXPROCESS.                                                SRCE 915
23140      EXAMINE PT3PLUMERISE REPLACING LEADING SPACES BY ZEROS.        SRCE 916
23150      IF PT3-PLUME-RISE NOT NUMERIC GO TO NOT-NUMERIC-46 ELSE        SRCE 917
23160          COMPUTE OPLUME-RISE = PT3-PLUME-RISE * .0929.              SRCE 918
23170      GO TO MAXPROCESS.                                              SRCE 919
23172 NOT-NUMERIC-46.                                                     SRCE 920
23174      MOVE '46' TO FIELD-NO.                                         SRCE 921
23176      MOVE PT3PLUMERISE  TO FIELD.                                   SRCE 922
23179      PERFORM NOT-NUMERIC.                                           SRCE 923
23180 MAXPROCESS.                                                         SRCE 924
23190      IF PT3MXPROCESS = SPACES MOVE ZEROS TO OMAX-PROCESS GO TO      SRCE 925
23200          MAXEXHST.                                                  SRCE 926
24010      EXAMINE PT3MXPROCESS  REPLACING LEADING SPACES BY ZEROS.       SRCE 927
24020      IF PT3-MAX-PROCESS NOT NUMERIC GO TO NOT-NUMERIC-47 ELSE       SRCE 928
24030          MOVE PT3-MAX-PROCESS TO OMAX-PROCESS.                      SRCE 929
24040      GO TO MAXEXHST.                                                SRCE 930
24042 NOT-NUMERIC-47.                                                     SRCE 931
24044      MOVE '47' TO FIELD-NO.                                         SRCE 932
24046      MOVE PT3MXPROCESS  TO FIELD.                                   SRCE 933
24049      PERFORM NOT-NUMERIC.                                           SRCE 934
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24050 MAXEXHST.                                                        SRCE 935
24060     IF PT3MAXEXHST = SPACES MOVE ZEROS TO OMAX-EXHST GO TO       SRCE 936
24070         STACKDIA.                                                SRCE 937
24080     EXAMINE PT3MAXEXHST REPLACING LEADING SPACES BY ZEROS.       SRCE 938
24090     IF PT3-MAX-EXHST NOT NUMERIC GO TO NOT-NUMERIC-48 ELSE       SRCE 939
24100         MOVE PT3-MAX-EXHST TO OMAX-EXHST.                        SRCE 940
24110     GO TO STACKDIA.                                              SRCE 941
24112 NOT-NUMERIC-48.                                                  SRCE 942
24114     MOVE '48' TO FIELD-NO.                                       SRCE 943
24116     MOVE PT3MAXEXHST   TO FIELD.                                 SRCE 944
24119     PERFORM NOT-NUMERIC.                                         SRCE 945
24120 STACKDIA.                                                        SRCE 946
24130     IF PT3STACKDIA = SPACES MOVE ZEROS TO OSTACK-DIA GO TO       SRCE 947
24140         STACKVEL.                                                SRCE 948
24150     EXAMINE PT3STACKDIA REPLACING LEADING SPACES BY ZEROS.       SRCE 949
24160     IF PT3-STACK-DIA NOT NUMERIC GO TO NOT-NUMERIC-49 ELSE       SRCE 950
24170         COMPUTE OSTACK-DIA = PT3-STACK-DIA * .3048.              SRCE 951
24180     GO TO STACKVEL.                                              SRCE 952
24182 NOT-NUMERIC-49.                                                  SRCE 953
24184     MOVE '49' TO FIELD-NO.                                       SRCE 954
24186     MOVE PT3STACKDIA   TO FIELD.                                 SRCE 955
24189     PERFORM NOT-NUMERIC.                                         SRCE 956
24190 STACKVEL.                                                        SRCE 957
24200     IF PT3STACKVEL = SPACES MOVE ZEROS TO OSTACK-VEL GO TO       SRCE 958
25010         USEFACTOR.                                               SRCE 959
25020     EXAMINE PT3STACKVEL REPLACING LEADING SPACES BY ZEROS.       SRCE 960
25030     IF PT3-STACK-VEL NOT NUMERIC GO TO NOT-NUMERIC-50 ELSE       SRCE 961
25040         COMPUTE OSTACK-VEL = PT3-STACK-VEL * .3048.              SRCE 962
25050     GO TO USEFACTOR.                                             SRCE 963
25052 NOT-NUMERIC-50.                                                  SRCE 964
25054     MOVE PT3STACKVEL   TO FIELD.                                 SRCE 965
25056     MOVE '50' TO FIELD-NO.                                       SRCE 966
25059     PERFORM NOT-NUMERIC.                                         SRCE 967
25060 USEFACTOR.                                                       SRCE 968
25070     IF PT3USEFACTOR = SPACES MOVE ZEROS TO OUSE-FACTOR GO TO     SRCE 969
25080         NOP3.                                                    SRCE 970
25090     EXAMINE PT3USEFACTOR REPLACING LEADING SPACES BY ZEROS.      SRCE 971
25100     IF PT3-USE-FACTOR NOT NUMERIC GO TO NOT-NUMERIC-51 ELSE      SRCE 972
25102         MOVE PT3-USE-FACTOR TO OUSE-FACTOR.                      SRCE 973
25103 NOP3.   MOVE SPACES TO PRNT-LN.                                  SRCE 974
25104 GO-BACK3.                                                        SRCE 975
25106     GO TO READ-TRAN2.                                            SRCE 976
25112 NOT-NUMERIC-51.                                                  SRCE 977
25114     MOVE '51' TO FIELD-NO.                                       SRCE 978
25116     MOVE PT3USEFACTOR  TO FIELD.                                 SRCE 979
25119     PERFORM NOT-NUMERIC.                                         SRCE 980
25120     GO TO NOP3.                                                  SRCE 981
25128 READ-TRAN2.                                                      SRCE 982
25130     READ SOURCE-TRAN AT END GO TO RIT-DUMMY.                     SRCE 983
25140     IF TRANS-ID NOT NUMERIC GO TO IC-BAD.                        SRCE 984
25150     IF PT1-SIC = 9999 PERFORM FLAG-TEST GO TO AREA-SOURCE1.      SRCE 985
25160     IF TRANS-ID = PREVIOUS-ID  PERFORM DUPLICATE-AT              SRCE 986
25165         GO TO READ-TRAN2.                                        SRCE 987
25170     IF TRANS-ID NOT > PREVIOUS-ID GO TO OUT-OF-SORT05.           SRCE 988
25180     PERFORM FLAG-TEST.                                           SRCE 989
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25190      GO TO CARD1-TEST.                                              SRCE 990
25200 RIT-DUMMY.                                                          SRCE 991
25210      PERFORM FLAG-TEST.                                             SRCE 992
26000 DUM-END.                                                            SRCE 993
26010      MOVE PT1-REGION TO DUM-REGION.                                 SRCE 994
26020      WRITE SOURCE-DUMMY FROM DUMMY-REC.                             SRCE 995
26025 END-DUMMY.                                                          SRCE 996
26030      GO TO CLOSE-ROUTINE.                                           SRCE 997
26040 AREA-SOURCE1.                                                       SRCE 998
26050      PERFORM DUM-END.                                               SRCE 999
26055      GO TO AREA-EDIT.                                               SRCE1000
26060 COMPARE-SICS.                                                       SRCE1001
26070      IF AT-ID = PREVIOUS-ID GO TO DUPLICATE-AT.                     SRCE1002
26080      IF AT-ID > PREVIOUS-ID GO TO AREA-EDIT.                        SRCE1003
26090      GO TO OUT-OF-SORTS.                                            SRCE1004
26100 AREA-EDIT.                                                          SRCE1005
26110      IF AT-PROC-CD NOT = ZERO GO TO BAD-ID-57 ELSE                  SRCE1006
26120          MOVE AT-ID TO PREVIOUS-ID, OAREA-ID.                       SRCE1007
26130 AREA-LOCX.                                                          SRCE1008
26140      IF AT-LOCX = SPACES GO TO BLANK-58.                            SRCE1009
26150          EXAMINE AT-LOCX REPLACING LEADING SPACES BY ZEROS.         SRCE1010
26160      IF AT-LOC-X NOT NUMERIC GO TO NOT-NUMERIC-58 ELSE              SRCE1011
26170          MOVE AT-LOC-X TO OAR-LOC-X GO TO AREA-LOCY.                SRCE1012
26172 BLANK-58.                                                           SRCE1013
26174      MOVE '58' TO FIELD-NO.                                         SRCE1014
26176      PERFORM BLANK-FIELD.                                           SRCE1015
26180 AREA-LOCY.                                                          SRCE1016
26190      IF AT-LOCY = SPACES GO TO BLANK-59.                            SRCE1017
26200          EXAMINE AT-LOCY REPLACING LEADING SPACES BY ZEROS.         SRCE1018
27010      IF AT-LOC-Y NOT NUMERIC GO TO NOT-NUMERIC-59 ELSE              SRCE1019
27020          MOVE AT-LOC-Y TO OAR-LOC-Y GO TO AREA-AREA.                SRCE1020
27022 BLANK-59.                                                           SRCE1021
27024      MOVE '59' TO FIELD-NO.                                         SRCE1022
27026      PERFORM BLANK-FIELD.                                           SRCE1023
27030 AREA-AREA.                                                          SRCE1024
27040      IF ATAREA = SPACES GO TO BLANK-60      ELSE                    SRCE1025
27050          EXAMINE, ATAREA REPLACING LEADING SPACES BY ZEROS.         SRCE1026
27060      IF AT-AREA NOT NUMERIC GO TO NOT-NUMERIC-60 ELSE               SRCE1027
27070          MOVE AT-AREA TO OAR-APEA GO TO AREA-POLITICAL.             SRCE1028
27072 BLANK-60.                                                           SRCE1029
27074      MOVE '60' TO FIELD-NO.                                         SRCE1030
27076      PERFORM BLANK-FIELD.                                           SRCE1031
27080 AREA-POLITICAL.                                                     SRCE1032
27090      IF AT-POL-JUR = SPACES GO TO BLANK-61 ELSE                     SRCE1033
27100          MOVE AT-POL-JUR TO OAR-POL-JUR GO TO EFFECTIVE-STACK.      SRCE1034
27102 BLANK-61.                                                           SRCE1035
27104      MOVE '61' TO FIELD-NO.                                         SRCE1036
27106      PERFORM BLANK-FIELD.                                           SRCE1037
27110 EFFECTIVE-STACK.                                                    SRCE1038
27120      IF ATEFFSTKHGT = SPACES MOVE ZEROS TO OEFF-STACK-HGT GO TO     SRCE1039
27130          AREA-SO2-EM.                                               SRCE1040
27140      EXAMINE ATEFFSTKHGT REPLACING LEADING SPACES BY ZEROS.         SRCE1041
27150      IF AT-EFF-STK-HGT NOT NUMERIC GO TO NOT-NUMERIC-62 ELSE        SRCE1042
27160          COMPUTE OEFF-STACK-HGT = AT-EFF-STK-HGT * .3048.           SRCE1043
27170      GO TO AREA-SO2-EM.                                             SRCE1044
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27172 NOT-NUMERIC-62.                                                  SRCE1045
27174     MOVE '62' TO FIELD-NO.  MOVE ATEFFSTKHGT TO FIELD.           SRCE1046
27176     PERFORM NOT-NUMERIC.                                         SRCE1047
27180 AREA-SO2-EM.                                                     SRCE1048
27190     IF ATSO2EMISS = SPACES GO TO CHECK-PART ELSE                 SRCE1049
27200         EXAMINE ATSO2EMISS REPLACING LEADING SPACES BY ZEROS.    SRCE1050
28010     IF AT-SO2-EMISS NOT NUMERIC GO TO NOT-NUMERIC-63 ELSE        SRCE1051
28020         MOVE AT-SO2-EMISS TO OSO2-EMISSION GO TO AREA-PART-EM.   SRCE1052
28030 CHECK-PART.                                                      SRCE1053
28040     IF ATPARTEMISS = SPACES GO TO BLANK-FIELDS-64 ELSE           SRCE1054
28050         MOVE ZEROS TO OSO2-EMISSION GO TO AREA-PART-EM.          SRCE1055
28052 NOT-NUMERIC-63.                                                  SRCE1056
28054     MOVE '63' TO FIELD-NO.  MOVE ATSO2EMISS TO FIELD.            SRCE1057
28058     PERFORM NOT-NUMERIC.                                         SRCE1058
28060 AREA-PART-EM.                                                    SRCE1059
28070     IF ATPARTEMISS = SPACES MOVE ZEROS TO OPART-EMISSION GO TO   SRCE1060
28080         NOP4.                                                    SRCE1061
28090     EXAMINE ATPARTEMISS REPLACING LEADING SPACES BY ZEROS.       SRCE1062
28100     IF AT-PART-EMISS NOT NUMERIC GO TO NOT-NUMERIC-64 ELSE       SRCE1063
28110         MOVE AT-PART-EMISS TO OPART-EMISSION GO TO NOP4.         SRCE1064
28112 BLANK-FIELDS-64.                                                 SRCE1065
28114     MOVE '64' TO FIELD-NO.                                       SRCE1066
28116     PERFORM BLANK-FIELDS.                                        SRCE1067
28118 NOP4.  MOVE SPACE TO PRNT-LN.                                    SRCE1068
28120 WRITE-AREA.                                                      SRCE1069
28130     IF FLAG = SPACE WRITE AREA-SOURCE-OUT GO TO READ-AREA, ELSE  SRCE1070
28135     MOVE SPACE TO FLAG.                                          SRCE1071
28140 READ-AREA.                                                       SRCE1072
28150     READ SOURCE-TRAN AT END GO TO CLOSE-ROUTINE.                 SRCE1073
28160     GO TO COMPARE-SICS.                                          SRCE1074
28165 CLOSE-ROUTINE1.                                                  SRCE1075
28167     CLOSE SOURCE-IN.                                             SRCE1076
28170 CLOSE-ROUTINE.                                                   SRCE1077
28180     CLOSE SOURCE-TRAN.                                           SRCE1078
28190     CLOSE SOURCE-OUT, PRINT-LIST.                                SRCE1079
28200     STOP RUN.                                                    SRCE1080
29010 BLANK-FIELD.                                                     SRCE1081
29020     MOVE '01' TO FM-NO.                                          SRCE1082
29025     MOVE 'X' TO FLAG.                                            SRCE1083
29030     MOVE 'BLANK FIELD' TO MSG-TEXT. PERFORM MSG-PRINT.           SRCE1084
29040 MSG-PRINT.                                                       SRCE1085
29050     MOVE TRANS-ID TO FM-ID.                                      SRCE1086
29060     WRITE PRNT-LN FROM ERROR-MSG AFTER ADVANCING 2 LINES.        SRCE1087
29070     MOVE SPACES TO PRNT-LN. PERFORM CLEAR-MSG.                   SRCE1088
29080 NOT-NUMERIC.                                                     SRCE1089
29090     MOVE '02' TO FM-NO.                                          SRCE1090
29095     MOVE 'X' TO FLAG.                                            SRCE1091
29100     MOVE 'NOT NUMERIC' TO MSG-TEXT.                              SRCE1092
29110     PERFORM MSG-PRINT.                                           SRCE1093
29120 BLANK-FIELDS.                                                    SRCE1094
29130     MOVE '03' TO FM-NO.                                          SRCE1095
29135     MOVE 'X' TO FLAG.                                            SRCE1096
29140     MOVE 'BOTH FIELDS BLANK' TO MSG-TEXT.                        SRCE1097
29150     PERFORM MSG-PRINT.                                           SRCE1098
29160 NOT-NUMERIC-64.                                                  SRCE1099
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29170      MOVE '64' TO FIELD-NO. MOVE ATPARTEMISS TO FIELD.                SRCE1100
29190      PERFORM NOT-NUMERIC.                                             SRCE1101
29200      GO TO NOP4.                                                      SRCE1102
29210 NOT-NUMERIC-60.                                                       SRCE1103
29220      MOVE '60' TO FIELD-NO. MOVE ATAREA TO FIELD.                     SRCE1104
29240      PERFORM NOT-NUMERIC. GO TO AREA-POLITICAL.                       SRCE1105
30010 BAD-ID-57.                                                            SRCE1106
30020      PERFORM BAD-ID.                                                  SRCE1107
30040      GO TO READ-AREA.                                                 SRCE1108
30050 BAD-ID.                                                               SRCE1109
30055      MOVE SPACES TO FM-FIELD.                                         SRCE1110
30060      MOVE '04' TO FM-NO.                                              SRCE1111
30070      MOVE 'BAD I.D. FIELD' TO MSG-TEXT.                               SRCE1112
30080      PERFORM MSG-PRINT.                                               SRCE1113
30090 OUT-OF-SORT05.                                                        SRCE1114
30100      MOVE '05' TO FM-NO.                                              SRCE1115
30110      MOVE SPACES TO FM-FIELD.                                         SRCE1116
30120      MOVE 'TRANS OUT OF SORT' TO MSG-TEXT.                            SRCE1117
30130      PERFORM MSG-PRINT.                                               SRCE1118
30140      GO TO CLOSE-ROUTINE1.                                            SRCE1119
30150 DUPLICATE-AT.                                                         SRCE1120
30160      MOVE '06' TO FM-NO.                                              SRCE1121
30170      MOVE SPACES TO FM-FIELD, FIELD-NO, FIELD.                        SRCE1122
30180      MOVE 'DUPLICATE SOURCE TRANSACTION' TO MSG-TEXT.                 SRCE1123
30190      PERFORM MSG-PRINT.                                               SRCE1124
30195 UPD.                                                                  SRCE1125
30200      GO TO READ-AREA.                                                 SRCE1126
30210 ID-BAD.                                                               SRCE1127
30230      PERFORM BAD-ID.                                                  SRCE1128
30240      GO TO READ-TRAN2.                                                SRCE1129
30310 NOT-NUMERIC-59.                                                       SRCE1130
30320      MOVE '59' TO FIELD-NO. MOVE AT-LOCY TO FIELD.                    SRCE1131
30340      PERFORM NOT-NUMERIC.                                             SRCE1132
30350      GO TO AREA-AREA.                                                 SRCE1133
30360 NOT-NUMERIC-58.                                                       SRCE1134
30370      MOVE '58' TO FIELD-NO. MOVE AT-LOCX TO FIELD.                    SRCE1135
30390      PERFORM NOT-NUMERIC.                                             SRCE1136
30392      GO TO AREA-LOCY.                                                 SRCE1137
30410 CLEAR-MSG.                                                            SRCE1138
30420      MOVE SPACES TO FM-NO, FM-ID, FIELD-NO,  FIELD, MSG-TEXT.         SRCE1139
30430      MOVE ' SOURCE ' TO FM-SOURCE.                                    SRCE1140
30440      MOVE ' FIELD ' TO FM-FIELD.                                      SRCE1141
30500 NO-CARD3.                                                             SRCE1142
30510      MOVE '21' TO FM-NO.                                              SRCE1143
30520      MOVE 'NO CARD 3' TO MSG-TEXT.                                    SRCE1144
30530      MOVE SPACES TO FM-FIELD.                                         SRCE1145
30540      MOVE PREVIOUS-ID TO FM-ID.                                       SRCE1146
30542      WRITE PRNT-LN FROM ERROR-MSG AFTER ADVANCING 2 LINES.            SRCE1147
30544      MOVE SPACES TO PRNT-LN. PERFORM CLEAR-MSG.                       SRCE1148
30600 NO-CARD1.                                                             SRCE1149
30610      MOVE '20' TO FM-NO.                                              SRCE1150
30620      MOVE 'NO CARD 1' TO MSG-TEXT.                                    SRCE1151
30630      MOVE SPACES TO FM-FIELD.                                         SRCE1152
30640      PERFORM MSG-PRINT.                                               SRCE1153
32010 NO-TYPE.                                                              SRCE1154
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32320      MOVE '07' TO FM-NO.                                          SRCE1155
32330      MOVE '10' TO FIELD-NO.                                       SRCE1156
32340      MOVE PT1-SOURCE-TYPE TO FIELD.                               SRCE1157
32350      MOVE 'X' TO FLAG.                                            SRCE1158
32360      MOVE 'INVALID SOURCE TYPE' TO MSG-TEXT.                      SRCE1159
32370      PERFORM MSG-PRINT.                                           SRCE1160
32380      GO TO SO2-CN.                                                SRCE1161
32390 NO-OWNER.                                                         SRCE1162
32400      MOVE '08' TO FM-NO.                                          SRCE1163
32410      MOVE '09' TO FIELD-NO.                                       SRCE1164
32420      MOVE PT1-OWNER TO FIELD.                                     SRCE1165
32430      MOVE 'X' TO FLAG.                                            SRCE1166
32440      MOVE 'INVALID OWNERSHIP' TO MSG-TEXT.                        SRCE1167
32450      PERFORM MSG-PRINT.                                           SRCE1168
32460      GO TO TEST-TYPE.                                             SRCE1169
32470 BLANK-FIELDS-12.                                                  SRCE1170
32480      MOVE '12' TO FIELD-NO.                                       SRCE1171
32490      PERFORM BLANK-FIELDS.                                        SRCE1172
32500      GO TO OP-TIME.                                               SRCE1173
32510 BLANK-FIELD-7.                                                    SRCE1174
32520      MOVE '07' TO FIELD-NO.                                       SRCE1175
32530      PERFORM BLANK-FIELD.                                         SRCE1176
32540      GO TO POLIT-JUR.                                             SRCE1177
32550 BLANK-FIELD-6.                                                    SRCE1178
32560      MOVE '06' TO FIELD-NO.                                       SRCE1179
32570      PERFORM BLANK-FIELD.  GO TO LOCATION-Y.                      SRCE1180
32580 NO-NAME1.                                                         SRCE1181
32590      MOVE '09' TO FM-NO.                                          SRCE1182
32600      MOVE '05' TO FIELD-NO.                                       SRCE1183
32610      MOVE 'X' TO FLAG.                                            SRCE1184
32620      MOVE 'NO NAME' TO MSG-TEXT.                                  SRCE1185
32630      PERFORM MSG-PRINT.                                           SRCE1186
32640      GO TO LOCATION-X.                                            SRCE1187
32650 NO-CARD-NBR.                                                      SRCE1188
32660      MOVE '10' TO FM-NO.                                          SRCE1189
32670      MOVE 'NO CARD NUMBER' TO MSG-TEXT.                           SRCE1190
32680      MOVE SPACES TO FM-FIELD.                                     SRCE1191
32690      PERFORM MSG-PRINT.                                           SRCE1192
32700 NO-TRANS.                                                         SRCE1193
32710      MOVE '11' TO FM-NO.                                          SRCE1194
32720      MOVE 'NO TRANSACTIONS' TO MSG-TEXT.                          SRCE1195
32730      MOVE SPACES TO FM-SOURCE, FM-FIELD, TRANSACTION-ID.          SRCE1196
32740      PERFORM MSG-PRINT.                                           SRCE1197
32750      GO TO CLOSE-ROUTINE.                                         SRCE1198
32760 NO-ACTION-CD.                                                     SRCE1199
32770      MOVE '12' TO FM-NO.                                          SRCE1200
32780      MOVE 'NO ACTION CARD' TO MSG-TEXT.                           SRCE1201
32790      MOVE SPACES TO FM-SOURCE, FM-FIELD, TRANSACTION-ID.          SRCE1202
32800      PERFORM MSG-PRINT.                                           SRCE1203
32810      GO TO CLOSE-ROUTINE.                                         SRCE1204
32820 NO-SOURCE-IN.                                                     SRCE1205
32830      MOVE '15' TO FM-NO.                                          SRCE1206
32840      MOVE 'NO SOURCE INPUT' TO MSG-TEXT.                          SRCE1207
32850      MOVE SPACES TO FM-SOURCE, FM-FIELD, TRANSACTION-ID.          SRCE1208
32860      PERFORM MSG-PRINT.                                           SRCE1209
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32700      GO TO CLOSE-ROUTINE1.                                          SRCE1210
32710 NO-DATE.                                                            SRCE1211
32720      MOVE '13' TO FM-NO.                                            SRCE1212
32730      MOVE 'NO DATE RECORD' TO MSG-TEXT.                             SRCE1213
32740      MOVE SPACES TO FM-SOURCE, FM-FIELD, TRANSACTION-ID.            SRCE1214
32750      PERFORM MSG-PRINT.                                             SRCE1215
32760      GO TO CLOSE-ROUTINE1.                                          SRCE1216
32770 ID3-BAD.                                                            SRCE1217
32780      PERFORM BAD-ID.                                                SRCE1218
32790      GO TO READ-TRAN3.                                              SRCE1219
32810 ID4-BAD.                                                            SRCE1220
32820      PERFORM BAD-ID.                                                SRCE1221
32830      GO TO READ-TRAN4.                                              SRCE1222
32840 NO-TRANS-CODE.  MOVE SPACES TO FM-FIELD.                            SRCE1223
32850      MOVE '19' TO FM-NO.                                            SRCE1224
32860      MOVE 'NO TRANSACTION CODE' TO MSG-TEXT.                        SRCE1225
32870      PERFORM MSG-PRINT.                                             SRCE1226
32880 END-FILE1.                                                          SRCE1227
32890      PERFORM NOT-ON-FILE.                                           SRCE1228
32910      GO TO CLOSE-ROUTINE1.                                          SRCE1229
32920 NOT-ON-FILE.                                                        SRCE1230
32930      MOVE '14' TO FM-NO. MOVE SPACES TO FM-FIELD.                   SRCE1231
32940      MOVE 'RECORD NOT ON FILE' TO MSG-TEXT.                         SRCE1232
32950      PERFORM MSG-PRINT.                                             SRCE1233
32960 ID12-BAD.                                                           SRCE1234
32970      PERFORM BAD-ID.                                                SRCE1235
32980      GO TO READ-TRAN12.                                             SRCE1236
32990 ID9-BAD.                                                            SRCE1237
33010      PERFORM BAD-ID.                                                SRCE1238
33020      GO TO READ-TRAN9.                                              SRCE1239
33030 NO-DUMMY.                                                           SRCE124C
33040      MOVE '17' TO FM-NO.                                            SRCE1241
33050      MOVE SPACE TO TRANSACTION-ID.                                  SRCE1242
33060      MOVE 'NO DUMMY RECORD' TO MSG-TEXT.                            SRCE1243
33070      MOVE SPACES TO FM-FIELD, FM-SOURCE.                            SRCE1244
33080      PERFORM MSG-PRINT.                                             SRCE1245
33090      GO TO CLOSE-ROUTINE1.                                          SRCE1246
33110 ID6-BAD.                                                            SRCE1247
33120      PERFORM BAD-ID.                                                SRCE1248
33130      GO TO READ-TRAN6.                                              SRCE1249
33140 ID8-BAD.                                                            SRCE1250
33150      PERFORM BAD-ID.                                                SRCE1251
33160      GO TO READ-TRAN8.                                              SRCE1252
33170 END-OLD11.                                                          SRCE1253
33180      PERFORM NOT-ON-FILE.                                           SRCE1254
33190      GO TO READ-TRAN13.                                             SRCE1255
33210 AREA-NOT.                                                           SRCE1256
33220      PERFORM NOT-ON-FILE.                                           SRCE1257
33230      GO TO READ-TRAN12.                                             SRCE1258
33240 AREA-EXISTS.                                                        SRCE1259
33250      MOVE '18' TO FM-NO.                                            SRCE1260
33260      MOVE 'AREA SOURCE ALREADY EXISTS' TO MSG-TEXT.                 SRCE1261
33270      MOVE SPACES TO FM-FIELD.                                       SRCE1262
33280      PERFORM MSG-PRINT.                                             SRCE1263
33290 WRONG-REGION.                                                       SRCE1264
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33300       MOVE '22' TO FM-NO.                                          SRCE1265
33310       MOVE 'WRONG REGION NO. ON ACTION CARD' TO MSG-TEXT.          SRCE1266
33320       MOVE SPACES TO FM-FIELD, FM-SOURCE, TRANSACTION-ID.          SRCE1267
33330       PERFORM MSG-PRINT.                                           SRCE1268
33340       GO TO CLOSE-ROUTINE1.                                        SRCE1269
37010 FLAG-TEST.                                                         SRCE1270
37020       IF FLAG = SPACE WRITE PT-SOURCE-OUT, ELSE                    SRCE1271
37030       MOVE SPACE TO FLAG.                                          SRCE1272
37040 NO-SOURCE-DATA.                                                    SRCE1273
37050       MOVE '16' TO FM-NO.                                          SRCE1274
37060       MOVE 'NO SOURCE TRANSACTIONS' TO MSG-TEXT.                   SRCE1275
37070       MOVE SPACES TO FM-SOURCE, FM-FIELD, TRANSACTION-ID.          SRCE1276
37080       PERFORM MSG-PRINT.                                           SRCE1277
37090       GO TO CLOSE-ROUTINE1.                                        SRCE1278
37100 BLANK-FIELD-14.                                                    SRCE1279
37110       MOVE '14' TO FIELD-NO.                                       SRCE1280
37120       PERFORM BLANK-FIELD.                                         SRCE1281
37130       GO TO SO2-CONTROL.                                           SRCE1282
40000 UPDATE-FILE.                                                       SRCE1283
40005       OPEN OUTPUT SOURCE-OUT.                                      SRCE1284
40010       OPEN INPUT SOURCE-IN.                                        SRCE1285
40020       READ SOURCE-IN AT END GO TO NO-SOURCE-IN.                    SRCE1286
40030       IF CREATE NOT = 'CREATE DATE ' GO TO NO-DATE.                SRCE1287
40035       IF REGION-NO NOT = REGION-NUMBER GO TO WRONG-REGION.         SRCE1288
40040       MOVE CREATE TO OCREATE.                                      SRCE1289
40050       MOVE CREATE-DATE TO OCREATE-DATE.                            SRCE1290
40060       MOVE UPDATE TO OUPDATE.                                      SRCE1291
40070       MOVE ACTION TO OUPDATE-DATE.                                 SRCE1292
40080       MOVE REGION TO OREGION.                                      SRCE1293
40090       MOVE REGION-NUMBER TO OREGION-NUMBER.                        SRCE1294
40100       WRITE DATE-REC-OUT.                                          SRCE1295
40110 READ-TRAN3.                                                        SRCE1296
40120       READ SOURCE-TRAN AT END GO TO NO-SOURCE-DATA.                SRCE1297
40130       IF TRANS-ID NOT NUMERIC GO TO ID3-BAD.                       SRCE1298
40140       IF PT1-SIC = 9999 GO TO AREA-SOURCE11.                       SRCE1299
40150       MOVE TRANS-ID TO PREVIOUS-ID, PERFORM SAVE.                  SRCE1300
40160       GO TO TRANS-CODE-TEST.                                       SRCE1301
40230 READ-OLD1.                                                         SRCE1302
40240       READ SOURCE-IN AT END GO TO END-FILE1.                       SRCE1303
40250 D4.  IF SOURCEIN-ID < TRANS-ID                                     SRCE1304
40260           MOVE PT-SOURCE-IN TO PT-SOURCE-OUT                       SRCE1305
40270           WRITE PT-SOURCE-OUT                                      SRCE1306
40280           GO TO READ-OLD1.                                         SRCE1307
40290       IF SOURCEIN-ID = TRANS-ID PERFORM READ-OLD1                  SRCE1308
40300           GO TO READ-TRAN4.                                        SRCE1309
40310       PERFORM NOT-ON-FILE.                                         SRCE1310
40320           GO TO READ-TRAN12.                                       SRCE1311
40330 READ-TRAN4.                                                        SRCE1312
40340       READ SOURCE-TRAN AT END GO TO READ-OLD15.                    SRCE1313
40350       IF TRANS-ID NOT NUMERIC GO TO ID4-BAD.                       SRCE1314
40360 D5.                                                                SRCE1315
40370       IF PT1-SIC = 9999 GO TO AREA-SOURCE11.                       SRCE1316
40380       IF TRANS-ID > PREVIOUS-ID MOVE TRANS-ID TO PREVIOUS-ID       SRCE1317
40385           MOVE AT-CODES TO SAVE-CODES GO TO TRANS-CODE-TEST.       SRCE1318
40390       IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORTS.                SRCE1319
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40400      IF AT-CODES NOT = SAVE-CODES PERFORM SAVE GO TO B12 ELSE      SRCE1320
40410          PERFORM DUPLICATE-AT. GO TO READ-TRAN4.                  SRCE1321
40420 READ-TRAN9.                                                       SRCE1322
40430      READ SOURCE-TRAN AT END GO TO READ-OLD15.                    SRCE1323
40440      IF TRANS-ID NOT NUMERIC GO TO ID9-BAD.                       SRCE1324
40450      IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.               SRCE1325
40460      IF TRANS-ID > PREVIOUS-ID MOVE TRANS-ID TO PREVIOUS-ID       SRCE1326
40465          MOVE AT-CODES TO SAVE-CODES GO TO GO-TO-B5.              SRCE1327
40470      IF AT-CODES NOT = SAVE-CODES PERFORM SAVE GO TO GO-TO-B5 ELSESRCE1328
40480          PERFORM DUPLICATE-AT. GO TO READ-TRAN9.                  SRCE1329
40490 READ-OLD2.                                                        SRCE1330
40500      READ SOURCE-IN AT END GO TO END-FILE1.                       SRCE1331
40510 D5.                                                               SRCE1332
40520      IF SOURCEIN-ID < TRANS-ID                                    SRCE1333
40530          MOVE PT-SOURCE-IN TO PT-SOURCE-OUT                       SRCE1334
40540          WRITE PT-SOURCE-OUT                                      SRCE1335
40550          GO TO READ-OLD2.                                         SRCE1336
40560      IF SOURCEIN-ID = TRANS-ID GO TO CARD-NO-TEST2.               SRCE1337
40570      PERFORM NOT-ON-FILE.                                         SRCE1338
40580          GO TO READ-TRAN12.                                       SRCE1339
40590 TRANS-CODE-TEST.                                                  SRCE1340
40600      IF TRANS-CODE = 'D' GO TO READ-OLD1.                         SRCE1341
40610      IF TRANS-CODE = 'C' GO TO READ-OLD2.                         SRCE1342
40620      IF TRANS-CODE = 'A' GO TO READ-OLD3.                         SRCE1343
40630      PERFORM NO-TRANS-CODE.                                       SRCE1344
40640          GO TO READ-TRAN4.                                        SRCE1345
40641 TRANS-CODE-TEST2.                                                 SRCE1346
40643      IF TRANS-CODE = 'D' GO TO D4.                                SRCE1347
40645      IF TRANS-CODE = 'C' GO TO D6.                                SRCE1348
40647      IF TRANS-CODE = 'A' GO TO E10.                               SRCE1349
40649      PERFORM NO-TRANS-CODE GO TO READ-TRAN4.                      SRCE1350
40650 CARD-NO-TEST2.                                                    SRCE1351
40660      IF CARD-NO = 1 GO TO CARD1-CHANGE.                           SRCE1352
40670          MOVE PT-REC1 TO PT-OUT1.                                 SRCE1353
40680 TYPE2.                                                            SRCE1354
40690      IF CARD-NO = 2 GO TO CARD2-CHANGE.                           SRCE1355
40700          MOVE PT-REC2 TO PT-OUT2.                                 SRCE1356
40710 TYPE3.                                                            SRCE1357
40720      IF CARD-NO = 3 GO TO CARD3-CHANGE.                           SRCE1358
40730          MOVE PT-REC3 TO PT-OUT3 WRITE PT-SOURCE-OUT.             SRCE1359
40740      PERFORM NO-CARD-NBR.                                         SRCE1360
40750          GO TO READ-TRAN4.                                        SRCE1361
40760 CARD1-CHANGE.                                                     SRCE1362
40770      PERFORM CARD1-EDIT THRU DEVICE.                              SRCE1363
40780      IF FLAG NOT = ' ' MOVE PT-REC1 TO PT-OUT1 MOVE SPACE TO FLAG.SRCE1364
40790 READ-TRAN6. READ SOURCE-TRAN AT END GO TO MOVE-OLD2.              SRCE1365
40800      IF TRANS-ID NOT NUMERIC GO TO ID6-BAD.                       SRCE1366
40810      IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.               SRCE1367
40820      IF TRANS-ID = PREVIOUS-ID PERFORM SAVE GO TO A8.             SRCE1368
40830      MOVE TRANS-ID TO PREVIOUS-ID, PERFORM SAVE.                  SRCE1369
40840 E6. MOVE PT-REC2 TO PT-OUT2.                                      SRCE1370
40850 C8. MOVE PT-REC3 TO PT-OUT3.                                      SRCE1371
40860 WRITE-NEW. WRITE PT-SOURCE-OUT.                                   SRCE1372
40880 GO-TO-B5.                                                         SRCE1373
40885      IF PT1-SIC = 9999 GO TO AREA-CODE-TEST, ELSE                 SRCE1374
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40887          GO TO TRANS-CODE-TEST.                                    SRCE1375
40890 MOVE-OLD2.                                                         SRCE1376
40900      PERFORM E6 THRU WRITE-NEW.                                    SRCE1377
41010.     GO TO READ-OLD15.                                             SRCE1378
41020 MOVE-OLD3.                                                         SRCE1379
41030      PERFORM C8 THRU WRITE-NEW.                                    SRCE1380
41040      GO TO READ-OLD15.                                             SRCE1381
41050 CARD3-CHANGE.                                                      SRCE1382
41060      PERFORM CARD3-EDIT THRU NOP3.                                 SRCE1383
41070      IF FLAG NOT = SPACE MOVE PT-REC3 TO PT-OUT3 MOVE SPACE TO     SRCE1384
41080          FLAG.                                                     SRCE1385
41090      WRITE PT-SOURCE-OUT.                                          SRCE1386
41100      GO TO READ-TRAN4.                                             SRCE1387
41110 READ-OLD3.                                                         SRCE1388
41120      READ SOURCE-IN AT END GO TO NO-DUMMY.                         SRCE1389
41130 E10.                                                               SRCE1390
41140      IF SOURCEIN-ID = TRANS-ID GO TO CARD-NO-TEST2.                SRCE1391
41150      IF SOURCEIN-ID < TRANS-ID MOVE PT-SOURCE-IN TO PT-SOURCE-OUT  SRCE1392
41160          WRITE PT-SOURCE-OUT GO TO READ-OLD3.                      SRCE1393
41170 CARD1-TEST2.                                                       SRCE1394
41180      IF CARD-NO = '1' GO TO CARD1-ADD, ELSE                        SRCE1395
41190          MOVE TRANS-ID TO PREVIOUS-ID PERFORM NO-CARD1             SRCE1396
41200          GO TO SKIP-TO-NEXT.                                       SRCE1397
41210 CARD2-TEST2.                                                       SRCE1398
41220      IF CARD-NO = '2' GO TO CARD2-ADD, ELSE                        SRCE1399
41230          MOVE ZEROES TO PT-OUT2.                                   SRCE1400
41232 CARD3-TEST2.                                                       SRCE1401
41234      IF CARD-NO = '3' GO TO CARD3-ADD, ELSE                        SRCE1402
41236          MOVE TRANS-ID TO PREVIOUS-ID PERFORM NO-CARD3             SRCE1403
41238          GO TO SKIP-TO-NEXT.                                       SRCE1404
41250 CARD1-ADD.                                                         SRCE1405
41260      PERFORM CARD1-EDIT THRU DEVICE.                               SRCE1406
41270          GO TO READ-TRAN10.                                        SRCE1407
41300 CARD2-ADD.                                                         SRCE1408
41310      PERFORM CARD2-EDIT THRU NOP1.                                 SRCE1409
41320          GO TO READ-TRAN10-CD3.                                    SRCE1410
41330 CARD3-ADD.                                                         SRCE1411
41340      PERFORM CARD3-EDIT THRU NOP3.                                 SRCE1412
41350      GO TO WRITE-TEST.                                             SRCE1413
41360 READ-TRAN10.                                                       SRCE1414
41370      READ SOURCE-TRAN AT END PERFORM NO-CARD3 GO TO B15.           SRCE1415
41375      IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO READ-TRAN10.     SRCE1416
41380      IF TRANS-ID = PREVIOUS-ID PERFORM SAVE GO TO CARD2-TEST2.     SRCE1417
41390      IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                SRCE1418
41400      PERFORM NO-CARD3 MOVE TRANS-ID TO PREVIOUS-ID PERFORM SAVE.   SRCE1419
41410      IF PT1-SIC = 9999 GO TO AREA-CODE-TEST2, ELSE                 SRCE1420
41420          GO TO TRANS-CODE-TEST2.                                   SRCE1421
41422 READ-TRAN10-CD3.                                                   SRCE1422
41424      READ SOURCE-TRAN AT END PERFORM NO-CARD3 GO TO B15.           SRCE1423
41426      IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO SKIP-TO-NEXT.    SRCE1424
41428      IF TRANS-ID = PREVIOUS-ID PERFORM SAVE GO TO CARD3-TEST2.     SRCE1425
41430      IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                SRCE1426
41432      PERFORM NO-CARD3 MOVE TRANS-ID TO PREVIOUS-ID PERFORM SAVE.   SRCE1427
41434      IF PT1-SIC = 9999 GO TO AREA-CODE-TEST2, ELSE                 SRCE1428
41436          GO TO TRANS-CODE-TEST2.                                   SRCE1429
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41438 SKIP-TO-NEXT.                                                    SRCE1430
41440     READ SOURCE-TRAN AT END GO TO B15.                           SRCE1431
41442     IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO SKIP-TO-NEXT.   SRCE1432
41444     IF TRANS-ID = PREVIOUS-ID GO TO SKIP-TO-NEXT.                SRCE1433
41446     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.               SRCE1434
41448     MOVE TRANS-ID TO PREVIOUS-ID PERFORM SAVE.                   SRCE1435
41450     IF PT1-SIC = 9999 GO TO AREA-CODE-TEST2, ELSE                SRCE1436
41452         GO TO TRANS-CODE-TEST2.                                  SRCE1437
41480 WRITE-TEST.                                                      SRCE1438
41490     IF FLAG NOT = SPACE MOVE SPACE TO FLAG GO TO READ-TRAN10D.   SRCE1439
41500     WRITE PT-SOURCE-OUT.                                         SRCE1440
41510 READ-TRAN10D.                                                    SRCE1441
41520     READ SOURCE-TRAN AT END GO TO B15.                           SRCE1442
41525     IF TRANS-ID NOT NUMERIC PERFORM BAD-ID GO TO READ-TRAN10D.   SRCE1443
41530     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.               SRCE1444
41540     IF TRANS-ID > PREVIOUS-ID MOVE TRANS-ID TO PREVIOUS-ID       SRCE1445
41545         MOVE AT-CODES TO SAVE-CODES GO TO B12.                   SRCE1446
41550     IF AT-CODES NOT = SAVE-CODES PERFORM SAVE GO TO B12 ELSE     SRCE1447
41560         PERFORM DUPLICATE-AT. GO TO READ-TRAN10D.                SRCE1448
41570 A8.                                                              SRCE1449
41580     IF TRANS-CODE = 'C' GO TO TYPE2.                             SRCE1450
41590     IF TRANS-CODE = 'A' GO TO TYPE2.                             SRCE1451
41600         MOVE PT-REC2 TO PT-OUT2.                                 SRCE1452
41610         MOVE PT-REC3 TO PT-OUT3.                                 SRCE1453
41620     WRITE PT-SOURCE-OUT.                                         SRCE1454
41630     PERFORM NO-TRANS-CODE.                                       SRCE1455
41640     GO TO READ-TRAN6.                                            SRCE1456
41650 CARD2-CHANGE.                                                    SRCE1457
41660     PERFORM CARD2-EDIT THRU NOP1.                                SRCE1458
41670     IF FLAG NOT = ' ' MOVE PT-REC2 TO PT-OUT2 MOVE SPACE TO FLAG.SRCE1459
41680 READ-TRAN8. READ SOURCE-TRAN AT END GO TO MOVE-OLD3.             SRCE1460
41690     IF TRANS-ID NOT NUMERIC GO TO ID8-BAD.                       SRCE1461
41700     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.               SRCE1462
41710     IF TRANS-ID > PREVIOUS-ID MOVE TRANS-ID TO PREVIOUS-ID       SRCE1463
41720         PERFORM SAVE GO TO C8.                                   SRCE1464
41725         PERFORM SAVE.                                            SRCE1465
41730 A9. IF TRANS-CODE = 'C' GO TO TYPE3.                             SRCE1466
41740     IF TRANS-CODE = 'A' GO TO TYPE3.                             SRCE1467
41750     PERFORM C8 THRU WRITE-NEW.                                   SRCE1468
41760     PERFORM NO-TRANS-CODE.                                       SRCE1469
41770     GO TO READ-TRAN8.                                            SRCE1470
41780 AREA-SOURCE11.                                                   SRCE1471
41790     IF AT-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                  SRCE1472
41800     IF AT-ID > PREVIOUS-ID MOVE AT-ID TO PREVIOUS-ID             SRCE1473
41805         MOVE AT-CODES TO SAVE-CODES GO TO AREA-CODE-TEST.        SRCE1474
41810     IF AT-CODES NOT = SAVE-CODES PERFORM SAVE                    SRCE1475
41815         GO TO AREA-CODE-TEST ELSE                                SRCE1476
41820         PERFORM DUPLICATE-AT. GO TO READ-TRAN4.                  SRCE1477
41830 AREA-CODE-TEST. MOVE AT-ID TO PREVIOUS-ID.                       SRCE1478
41840     IF AT-TRANS-CODE = 'D' GO TO READ-OLD11B.                    SRCE1479
41850     IF AT-TRANS-CODE = 'C' GO TO READ-OLD11C.                    SRCE1480
41860     IF AT-TRANS-CODE = 'A' GO TO READ-OLD13.                     SRCE1481
41870         PERFORM NO-TRANS-CODE.                                   SRCE1482
41880         GO TO READ-TRAN4.                                        SRCE1483
41890 READ-OLD13.                                                      SRCE1484
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41900      READ SOURCE-IN AT [illegible] GO TO C13.                                  SRCE1485
41910 AREA-COMPARE.                                                                  SRCE1486
41912      IF IDENT NOT > DUM-ID MOVE PT-SOURCE-IN TO PT-SOURCE-OUT                  SRCE1487
41914,         WRITE PT-SOURCE-OUT GO TO READ-OLD13.                                 SRCE1488
41920      IF AR-ID < AT-ID MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT                  SRCE1489
41930          WRITE AREA-SOURCE-OUT GO TO READ-OLD13.                               SRCE1490
41940      IF AR-ID > AT-ID GO TO ADD-AREA.                                          SRCE1491
41950      PERFORM AREA-EXISTS. MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT.             SRCE1492
41960          WRITE AREA-SOURCE-OUT GO TO READ-TRAN4.                               SRCE1493
41970 ADD-AREA.                                                                      SRCE1494
41980      PERFORM AREA-EDIT THRU NOP4.                                              SRCE1495
41990      IF FLAG NOT = SPACE GO TO READ-TRAN14.                                    SRCE1496
42000          WRITE AREA-SOURCE-OUT.                                                SRCE1497
42010          GO TO READ-TRAN14.                                                    SRCE1498
42020 READ-OLD11B.                                                                   SRCE1499
42030      READ SOURCE-IN AT END GO TO END-OLD11.                                    SRCE1500
42032      IF IDENT NOT > DUM-ID MOVE PT-SOURCE-IN TO PT-SOURCE-OUT                  SRCE1501
42034          WRITE PT-SOURCE-OUT GO TO READ-OLD11B.                                SRCE1502
42040 D11. IF AR-ID   >  AT-ID GO TO AREA-NOF.                                       SRCE1503
42050       IF AR-ID   =  AT-ID GO TO READ-TRAN4.                                    SRCE1504
42060          MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT                               SRCE1505
42065          WRITE AREA-SOURCE-OUT                                                 SRCE1506
42070          GO TO READ-OLD11B.                                                    SRCE1507
42080 READ-OLD11C.                                                                   SRCE1508
42090      READ SOURCE-IN AT END GO TO END-OLD11.                                    SRCE1509
42092      IF IDENT NOT > DUM-ID MOVE PT-SOURCE-IN TO PT-SOURCE-OUT                  SRCE1510
42094          WRITE PT-SOURCE-OUT GO TO READ-OLD11C.                                SRCE1511
42100 E11. IF AR-ID   >  AT-ID GO TO AREA-NOF.                                       SRCE1512
42110       IF AR-ID   <  AT-ID                                                      SRCE1513
42120          MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT                               SRCE1514
42125          WRITE AREA-SOURCE-OUT                                                 SRCE1515
42130          GO TO READ-OLD11C.                                                    SRCE1516
42140       PERFORM AREA-EDIT THRU NOP4.                                             SRCE1517
42150       IF FLAG NOT = SPACE MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT              SRCE1518
42160          PERFORM SAVE, ELSE WRITE AREA-SOURCE-OUT.                             SRCE1519
42170          GO TO READ-TRAN4.                                                     SRCE1520
42180 C13.                                                                           SRCE1521
42190      PERFORM AREA-EDIT THRU NOP4.                                              SRCE1522
42200      IF FLAG NOT = SPACE GO TO READ-TRAN13.                                    SRCE1523
42210          WRITE AREA-SOURCE-OUT.                                                SRCE1524
42220 READ-TRAN13.                                                                   SRCE1525
42230      READ SOURCE-TRAN AT END GO TO CLOSE-ROUTINE1.                             SRCE1526
42240      IF AT-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                               SRCE1527
42250      IF AT-ID = PREVIOUS-ID GO TO READ-TRAN13.                                 SRCE1528
42260          MOVE AT-ID TO PREVIOUS-ID.                                            SRCE1529
42270      IF AT-TRANS-CODE = 'A' GO TO C13 ELSE                                     SRCE1530
42280          GO TO READ-TRAN13.                                                    SRCE1531
42290 READ-TRAN14.                                                                   SRCE1532
42300      READ SOURCE-TRAN AT END GO TO B15.                                        SRCE1533
42310      IF AT-ID < PREVIOUS-ID GO TO OUT-OF-SORT05.                               SRCE1534
42320      IF AT-ID > PREVIOUS-ID MOVE AT-ID TO PREVIOUS-ID                          SRCE1535
42325          MOVE AT-CODES TO SAVE-CODES GO TO AREA-CODE-TEST2.                    SRCE1536
42330      IF AT-CODES NOT = SAVE-CODES PERFORM SAVE                                 SRCE1537
42333          GO TO AREA-CODE-TEST2 ELSE                                            SRCE1538
42335          PERFORM DUPLICATE-AT. GO TO READ-TRAN12.                              SRCE1539
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42340 AREA-CODE-TEST2.                                                  SRCE1540
42350     IF AT-TRANS-CODE = 'D' GO TO D11.                             SRCE1541
42360     IF AT-TRANS-CODE = 'C' GO TO E11.                             SRCE1542
42370     IF AT-TRANS-CODE ≠ 'A' GO TO AREA-COMPARE.                    SRCE1543
42380         PERFORM NO-TRANS-CODE.                                    SRCE1544
42390         GO TO READ-TRAN14.                                        SRCE1545
42400 READ-OLD15.                                                       SRCE1546
42410     READ SOURCE-IN AT END GO TO    CLOSE-ROUTINE1.              SRCE1547
42420 B15.                                                              SRCE1548
42430     IF IDENT NOT > DUM-ID MOVE PT-SOURCE-IN TO PT-SOURCE-OUT      SRCE1549
42435         GO TO C15, ELSE                                           SRCE1550
42437     MOVE AREA-SOURCE-REC TO AREA-SOURCE-OUT GO TO D15.            SRCE1551
42440 C15. WRITE PT-SOURCE-OUT GO TO READ-OLD15.                        SRCE1552
42450 D15. WRITE AREA-SOURCE-OUT GO TO READ-OLD15.                      SRCE1553
42460 READ-TRAN12.                                                      SRCE1554
42470     READ SOURCE-TRAN AT END GO TO B15.                            SRCE1555
42480     IF TRANS-ID NOT NUMERIC GO TO ID12-BAD.                       SRCE1556
42490     IF TRANS-ID < PREVIOUS-ID GO TO OUT-OF-SORTO5.                SRCE1557
42500     IF TRANS-ID > PREVIOUS-ID MOVE TRANS-ID TO PREVIOUS-ID        SRCE1558
42505         MOVE AT-CODES TO SAVE-CODES GO TO B12.                    SRCE1559
42510     IF AT-CODES NOT = SAVE-CODES PERFORM SAVE GO TO B12 ELSE      SRCE1560
42515         PERFORM DUPLICATE-AT. GO TO READ-TRAN12.                  SRCE1561
42520 B12.                                                              SRCE1562
42530     IF PT1-SIC = 9999 GO TO AREA-CODE-TEST2.                      SRCE1563
42540     IF TRANS-CODE = 'D' GO TO D4.                                 SRCE1564
42550     IF TRANS-CODE = 'C' GO TO D6.                                 SRCE1565
42560     IF TRANS-CODE = 'A' GO TO E10.                                SRCE1566
42570     PERFORM NO-TRANS-CODE.                                        SRCE1567
42580         GO TO READ-TRAN9.                                         SRCE1568
43000 SAVE.                                                             SRCE1569
43010     MOVE AT-CODES TO SAVE-CODES.                                  SRCE1570
50000 LIST-FILE.                                                        SRCE1571
50010 PAGER.                                                            SRCE1572
50020     ADD 1 TO PG-CNTR  MOVE PG-CNTR TO PG-NO                       SRCE1573
50030         WRITE PRNT-LN FROM PAGE-LINE AFTER ADVANCING 0 LINES.     SRCE1574
50040         ADD 1 TO LINE-CNTR.                                       SRCE1575
50050 PRINT-TITLE-1.,                                                   SRCE1576
50070     MOVE REGION-NO TO LREGION-NO MOVE ACTION TO LACTION           SRCE1577
50072         ADD 1 TO LINE-CNTR.                                       SRCE1578
50080     WRITE PRNT-LN FROM TITLE-1 AFTER ADVANCING 1 LINES.           SRCE1579
50090 PRINT-TITLE-2.                                                    SRCE1580
50094     OPEN INPUT SOURCE-OUT                                         SRCE1581
50096     READ SOURCE-OUT AT END GO TO NO-DATE.                         SRCE1582
50100     MOVE CORRESPONDING DATE-REC-OUT  TO TITLE-2.                  SRCE1583
50110         WRITE PRNT-LN FROM TITLE-2 AFTER ADVANCING 1 LINES.       SRCE1584
50120         ADD 1 TO LINE-CNTR.                                       SRCE1585
50191 COL-HDGS.                                                         SRCE1586
      WRITE PRNT-LN FROM LINE-ID AFTER 1 LINES.                         SRCE1587
50198 WRITE PRNT-LN FROM DASHED-LINE AFTER 1 LINES.                     SRCE1588
50192 WRITE PRNT-LN FROM HEADER-1 AFTER 1 LINES.                        SRCE1589
50193 WRITE PRNT-LN FROM TITLE-4 AFTER 1 LINES.                         SRCE1590
50194 WRITE PRNT-LN FROM HEADER-2 AFTER 2 LINES.                        SRCE1591
50195 WRITE PRNT-LN FROM TITLE-5  AFTER 1 LINES.                        SRCE1592
50196 WRITE PRNT-LN FROM HEADER-3 AFTER 2 LINES.                        SRCE1593
50197 WRITE PRNT-LN FROM TITLE-6  AFTER 1 LINES.                        SRCE1594
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50198      WRITE PRNT-LN FROM DASHED-LINE AFTER 1 LINES.                    SRCE1595
50199      ADD 11 TO LINE-CNTR.                                             SRCE1596
50130 PRINT-TITLE-3.                                                        SRCE1597
50140      WRITE PRNT-LN FROM TITLE-3 AFTER ADVANCING 2 LINES.              SRCE1598
50150          ADD 2 TO LINE-CNTR.                                          SRCE1599
50160 READ-SOURCE.                                                          SRCE1600
50170      READ SOURCE-OUT AT END GO TO END-LIST.                           SRCE1601
50180 TEST-SOURCE.                                                          SRCE1602
50190      IF OPT-SIC = 9999 PERFORM READ-SOURCE GO TO AREA-SOURCE.         SRCE1603
50200 END-OF-PAGE.                                                          SRCE1604
50210      IF LINE-CNTR > 46                                                SRCE1605
50220          SUBTRACT LINE-CNTR FROM LINE-CNTR                            SRCE1606
50230          PERFORM PAGER.                                               SRCE1607
50240 PRINT-HEADER-1.                                                       SRCE1608
50250      WRITE PRNT-LN FROM HEADER-1 AFTER ADVANCING 2 LINES.             SRCE1609
50260 PRINT-DATA-1.                                                         SRCE1610
50270      MOVE CORRESPONDING PT-OUT1 TO DATA-LN-1                          SRCE1611
50280          WRITE PRNT-LN FROM DATA-LN-1 AFTER ADVANCING 1 LINES.        SRCE1612
50290 PRINT-HEADER-2.                                                       SRCE1613
50300      WRITE PRNT-LN FROM HEADER-2 AFTER ADVANCING 2 LINES.             SRCE1614
50310 PRINT-DATA-2.                                                         SRCE1615
50320      MOVE CORRESPONDING PT-OUT2 TO DATA-LN-2                          SRCE1616
50330          WRITE PRNT-LN FROM DATA-LN-2 AFTER ADVANCING 1 LINES.        SRCE1617
50340 PRINT-HEADER-3.                                                       SRCE1618
50350      WRITE PRNT-LN FROM HEADER-3 AFTER ADVANCING 2 LINES.             SRCE1619
50360 PRINT-DATA-3.                                                         SRCE1620
50370      MOVE CORRESPONDING PT-OUT3 TO DATA-LN-3                          SRCE1621
50380      PERFORM WRITE PRNT-LN FROM DATA-LN-3 AFTER ADVANCING 1 LINES.    SRCE1622
50390          WRITE PRNT-LN FROM DASHED-LINE AFTER ADVANCING 1 LINES.      SRCE1623
50400          ADD 10 TO LINE-CNTR.                                         SRCE1624
50410      GO TO READ-SOURCE.                                               SRCE1625
50420 AREA-SOURCE.                                                          SRCE1626
50430      SUBTRACT LINE-CNTR FROM LINE-CNTR                                SRCE1627
50440          PERFORM PAGER.                                               SRCE1628
50450      MOVE 'AREA SOURCES ' TO SOURCE-TITLE                             SRCE1629
50460      WRITE PRNT-LN FROM TITLE-3A AFTER ADVANCING 2 LINES.             SRCE1630
50470      ADD 2 TO LINE-CNTR.                                              SRCE1631
50480 PRINT-HEADER-4.                                                       SRCE1632
50490      WRITE PRNT-LN FROM HEADER-4 AFTER ADVANCING 3 LINES.             SRCE1633
50500      ADD 3 TO LINE-CNTR. PERFORM BLANK-LN.                            SRCE1634
50510 PRINT-DATA-4.                                                         SRCE1635
50520      MOVE CORRESPONDING AREA-SOURCE-OUT TO DATA-LN-4.                 SRCE1636
50530      WRITE PRNT-LN FROM DATA-LN-4 AFTER ADVANCING 1 LINES.            SRCE1637
50540      ADD 1 TO LINE-CNTR.                                              SRCE1638
50550      PERFORM READ-SOURCE.                                             SRCE1639
50560      IF LINE-CNTR > 55                                                SRCE1640
50570          SUBTRACT LINE-CNTR FROM LINE-CNTR                            SRCE1641
50580          PERFORM PAGER                                                SRCE1642
50590          GO TO PRINT-HEADER-4, ELSE                                   SRCE1643
50600      GO TO PRINT-DATA-4.                                              SRCE1644
50610 END-LIST.                                                             SRCE1645
50620      CLOSE SOURCE-OUT, PRINT-LIST, SOURCE-TRAN.                       SRCE1646
50630      STOP RUN.                                                        SRCE1647
50640 BLANK-LN.                                                             SRCE1648
50650      MOVE SPACES TO PRNT-LN                                           SRCE1649
50660      WRITE PRNT-LN AFTER ADVANCING 1 LINES.                           SRCE1650
50670      ADD 1 TO LINE-CNTR.                                              SRCE1651
```

PROGRAM MAIN (Air Pollutant Concentration Program)

PURPOSE

The Air Pollutant Concentration Program generates ground-level arithmetic average pollutant concentration data and expected short term concentration values for specified averaging times. MAIN simply starts the program by calling the next subprogram. Its primary function is to provide the user with a brief description of input parameters, program messages, common block structure (including half-word integer usage) and calling list structure (necessary wherever variable dimensioning has been used, see subroutine DIM).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None

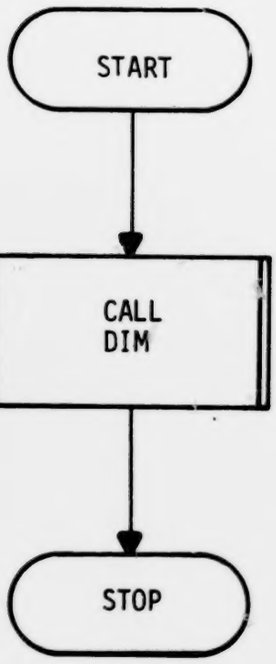
SUBROUTINES

DIM Sets maximum number of sources and calls DRIVER.

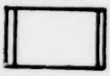
INPUT/OUTPUT VARIABLES

None

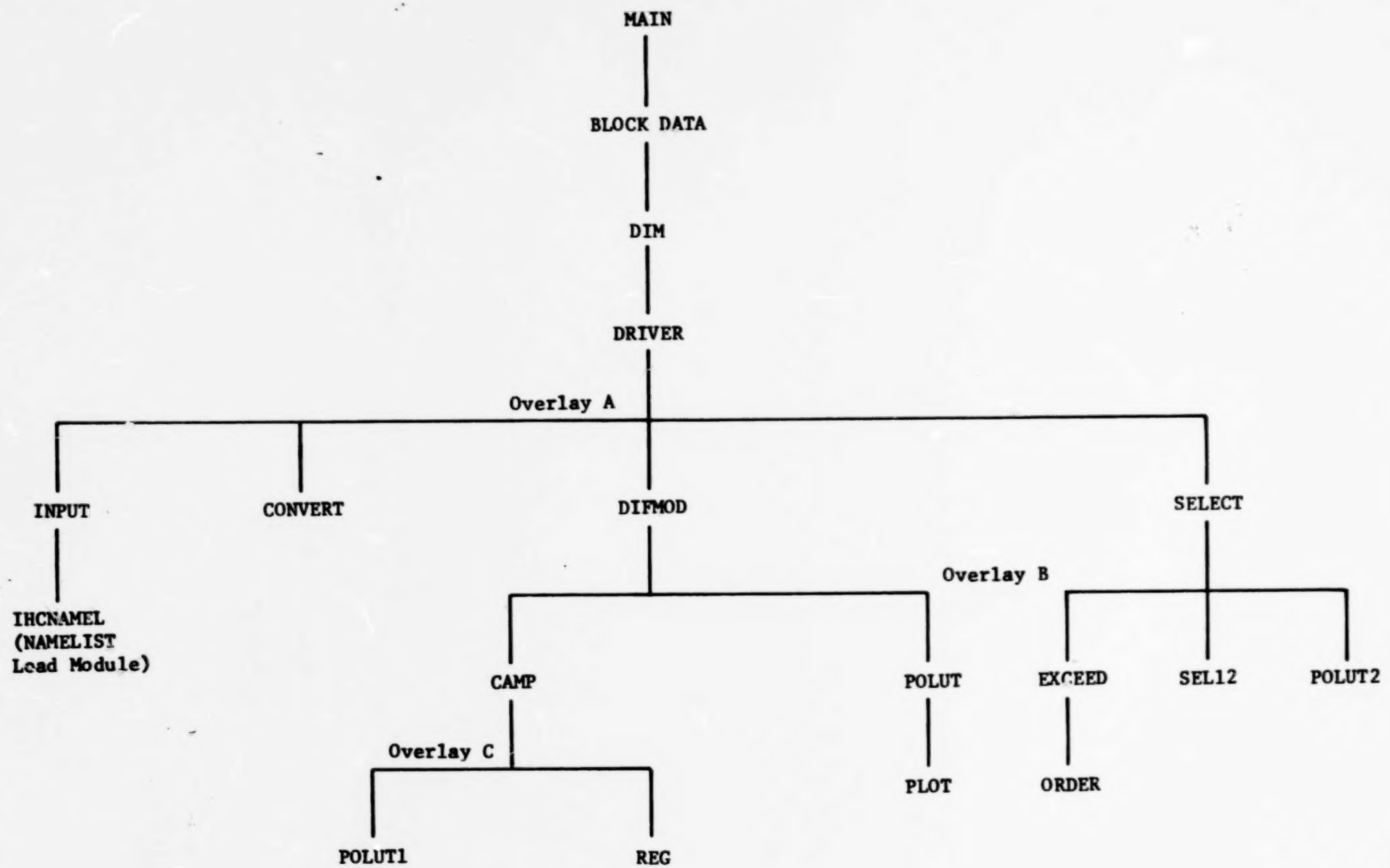
MAIN



NOTE:


INDICATES PREDEFINED
SUBROUTINE

Overlay Structure of the Air Pollutant Concentration Program



```
C     MAIN
C
C     ****************************************************************
C     *                                                              *
C     *    TITLE:    MAIN                                            *
C     *                                                              *
C     *    AUTHOR:   TRW SYSTEMS GROUP                               *
C     *              WASHINGTON OPERATIONS                           *
C     *              WASHINGTON, D.C.                                *
C     *                                                              *
C     *    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                 *
C     *                                                              *
C     *    LANGUAGE USED:  FORTRAN IV - G LEVEL                      *
C     *                                                              *
C     ****************************************************************
C
C
C     NAMELIST /INDATA/
C
C     LITERALS (TITLE AND DATE):
C
C     REGION(6)  - 24 CHARACTER DESCRIPTION OF THE REGION BEING RUN
C                - DEFAULTS TO BLANKS
C     DATE(5)    - DATE OF RUN (E.G., JULY 31, 1970)
C                - DEFAULTS TO BLANKS
C
C     METEOROLOGY DATA:
C
C     IPOLU1     - FLAG TO INDICATE SINGLE POLLUTANT RUN
C                    = 0, BOTH POLLUTANTS (DEFAULT)
C                    = 1, SO2 ONLY
C                    = 2, PARTICULATES ONLY
C     DPTHMX     - MIXING HEIGHT (METERS)  (NO DEFAULT OPTION)
C     WNDFRQ(6,16,5) - RELATIVE FREQUENCY OF OCCURRENCE FOR EACH WIND
C                   SPEED CLASS, WIND DIRECTION, AND WIND STABILITY CLASS
C                   COMBINATION (NO DEFAULT OPTION)
C     TA         - AVERAGE AMBIENT TEMPERATURE (DEGREES KELVIN)  (NO
C                   DEFAULT OPTION)
C     PA         - AVERAGE AMBIENT PRESSURE (MILLIBARS)  (NO DEFAULT
C                   OPTION)
C     BLIFE(2)   - HALF-LIFE FACTORS (SO2,PART)  (HOURS)
C                - DEFAULTS TO AN INFINITE HALF-LIFE FOR EACH POLLUTANT
C     BACKGR(2)  - BACKGROUND CONCENTRATIONS, ARITHMETIC MEAN (SO2,PART)
C                   (MICROGRAMS PER CUBIC METER)
C                - DEFAULTS TO ZEROES
C
C     RECEPTOR DATA:
C
C     INCRX      - NUMBER OF COLUMNS IN THE RECEPTOR GRID
C                - DEFAULTS TO ZERO
C     INCRY      - NUMBER OF ROWS IN THE RECEPTOR GRID
C                - DEFAULTS TO ZERO
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C     DELTA       - DISTANCE BETWEEN TWO ADJACENT ROWS OR COLUMNS
C                   (KILOMETERS)
C                 - DEFAULTS TO ZERO
C     RMAXSE(2)   - X- AND Y-COORDINATES OF SOUTHWEST CORNER OF RECEPTOR
C                   GRID SYSTEM (KILOMETERS)
C                 - DEFAULTS TO (0.0,0.0)
C
C     CALIBRATION DATA:
C
C     IREG        - FLAG TO INDICATE WHICH REGRESSION OPTION IS TO BE
C                   USED (NO DEFAULT OPTION)
C                     = 0, INPUT REGRESSION CONSTANTS ARE REQUIRED
C                          -- SO2CAL AND/OR PARCAL
C                     = 1, CALIBRATION OF MODEL FOLLOWED BY MODEL RUN
C                          -- NSO2 AND/OR NPART, AND SO2OB AND/OR PAROB
C                     = 2, CALIBRATION ONLY -- NSO2 AND/OR NPART, AND
C                          SO2OB AND/OR PAROB
C                 - IF IREG IS NOT SET TO ZERO, ONE, OR TWO, RUN WILL
C                   TERMINATE
C     SO2CAL(2)   - REGRESSION LINE CONSTANTS FOR SULFUR DIOXIDE
C                   (Y-INTERCEPT,SLOPE)
C                 - DEFAULTS TO (0.0,1.0) ONLY IF IREG EQUALS ZERO
C     PARCAL(2)   - REGRESSION LINE CONSTANTS FOR SUSPENDED PARTICULATE
C                   MATTER (Y-INTERCEPT,SLOPE)
C                 - DEFAULTS TO (0.0,1.0) ONLY IF IREG EQUALS ZERO
C     NSO2        - NUMBER OF SO2 MEASURING STATIONS
C                 - LESS THAN OR EQUAL TO 100
C                 - DEFAULTS TO ZERO
C     NPART       - NUMBER OF PARTICULATE MEASURING STATIONS
C                 - LESS THAN OR EQUAL TO 100
C                 - DEFAULTS TO ZERO
C     SO2OB(3,NSO2) - X- AND Y-COORDINATES AND MEASURED CONCENTRATION
C                   VALUE FOR THE NSO2 SO2 MEASURING STATIONS
C                 - DEFAULTS TO ZEROES
C     PAROB(3,NPART) - X- AND Y-COORDINATES AND MEASURED CONCENTRATION
C                   VALUE FOR THE NPART PARTICULATE MATTER MEASURING
C                   STATIONS
C                 - DEFAULTS TO ZEROES
C
C     OPTION DATA:
C
C     IADD        - TOTAL NUMBER OF NON-GRID RECEPTORS -- XRECEP
C                 - LESS THAN OR EQUAL TO 50
C                 - DEFAULTS TO ZERO
C                 NOTE: IF BOTH THE GRID SYSTEM AND NON-GRID RECEPTORS
C                       ARE OMITTED, RUN WILL TERMINATE
C     XRECEP(2,IADD) - X- AND Y-COORDINATES FOR THE IADD NON-GRID
C                   RECEPTORS
C                 - DEFAULTS TO ZEROES ONLY IF IADD EQUALS ZERO
C
C     IPUNCH      - FLAG TO INDICATE WHETHER RECEPTOR GROUND LEVEL
C                   CONCENTRATION OUTPUT IS TO BE PUNCHED ON CARDS FOR
```

NOT REPRODUCIBLE

```
C                 USE IN PLOTTING CONCENTRATION ISOPLETHS.
C                  = 0, NO PUNCHED CARD OUTPUT
C                  = 1, PUNCHED CARD OUTPUT (DEFAULT)
C
C     ISTAT       - FLAG TO INDICATE IF TABLE DATA IS DESIRED (THIS DATA
C                   INCLUDES THE EXCESS CONCENTRATION TABLE, SOURCE
C                   CONTRIBUTION TABLE AND THE STATISTICAL TABLES)
C                  = 0, NO OUTPUT (DEFAULT)
C                  = 1, OUTPUT
C
C     AQSTAN(2)   - AIR QUALITY STANDARDS, ARITHMETIC MEAN (SO2,PART)
C                   (MICROGRAMS PER CUBIC METER)
C                 - DEFAULTS TO ZEROES
C
C     NSEL5       - FLAG TO INDICATE THE ORIGIN OF THE FIVE RECEPTORS FOR
C                   THE SOURCE CONTRIBUTION TABLE
C                  = 0, PROGRAM SELECTS THE FIVE RECEPTORS OF MAXIMUM
C                       CONCENTRATION (DEFAULT)
C                  = 1, INPUT THROUGH PROGRAM VARIABLES ICONS AND/OR
C                       ICONP
C     ICONS(5)    - SO2 RECEPTOR LOCATION NUMBERS FOR SOURCE CONTRIBUTION
C                   TABLE OUTPUT (ALL FIVE VALUES MUST BE INPUT IF NSEL5
C                   EQUALS ONE AND SO2 IS CONSIDERED)
C                 - DEFAULTS TO ZEROES
C     ICONP(5)    - PARTICULATE MATTER RECEPTOR LOCATION NUMBERS FOR
C                   SOURCE CONTRIBUTION TABLE OUTPUT (ALL FIVE VALUES
C                   MUST BE INPUT IF NSEL5 EQUALS ONE AND PARTICULATES
C                   ARE CONSIDERED)
C                 - DEFAULTS TO ZEROES
C
C     NSEL12      - FLAG TO INDICATE WHETHER STATISTICAL OUTPUT IS DESIR-
C                   ED
C                  = 0, NO (DEFAULT)
C                  = 1, YES -- MUST INPUT ISTATS, SGDS, SO2AVG, AND
C                       SO2PER, AND/OR ISTATP, SGDP, PARAVG AND PARPER
C     ISTATS(12)  - SO2 RECEPTOR LOCATION NUMBERS FOR STATISTICAL OUTPUT
C                   (IF LESS THAN TWELVE VALUES ARE USED, THE REMAINING
C                   VALUES WILL DEFAULT TO ZEROES)
C     ISTATP(12)  - PARTICULATE MATTER RECEPTOR LOCATION NUMBERS FOR
C                   STATISTICAL OUTPUT (IF LESS THAN TWELVE VALUES ARE
C                   USED, THE REMAINING VALUES WILL DEFAULT TO ZEROES)
C     SGDS(12)    - STANDARD GEOMETRIC DEVIATIONS (24-HOUR PERIOD) FOR
C                   SO2 CORRESPONDING TO THE ISTATS RECEPTOR NUMBERS
C                   (THESE VALUES MUST BE INPUT IN THE SAME ORDER AS THE
C                   ISTATS RECEPTOR LOCATION NUMBERS TO WHICH THEY REFER)
C                 - DEFAULTS TO ZEROES
C     SGDP(12)    - STANDARD GEOMETRIC DEVIATIONS (24-HOUR PERIOD) FOR
C                   PARTICULATE MATTER CORRESPONDING TO THE ISTATP
C                   RECEPTOR NUMBERS (THESE VALUES MUST BE INPUT IN THE
C                   SAME ORDER AS THE ISTATP RECEPTOR LOCATION NUMBERS TO
C                   WHICH THEY REFER)
C                 - DEFAULTS TO ZEROES
```

NOT REPRODUCIBLE

```
C     SO2AVG(5)  - AVERAGING TIMES FOR SO2 (HOURS)  (IF LESS THAN FIVE
C                  VALUES ARE USED, THE REMAINING VALUES WILL DEFAULT TO
C                  ZEROES)
C     PARAVG(5)  - AVERAGING TIMES FOR PARTICULATE MATTER (HOURS)  (IF
C                  LESS THAN FIVE VALUES ARE USED, THE REMAINING VALUES
C                  WILL DEFAULT TO ZEROES)
C     SO2PER(3)  - PERCENTILE VALUES FOR SO2 (PERCENTAGE)  (MUST BE
C                  INPUT IF NSEL12 IS EQUAL TO ONE -- IF LESS THAN THREE
C                  VALUES ARE INPUT, THE REMAINING VALUE(S) WILL DEFAULT
C                  TO ZERO(ES))
C     PARPER(3)  - PERCENTILE VALUES FOR PARTICULATE MATTER (PERCENTAGE)
C                  (MUST BE INPUT IF NSEL12 IS EQUAL TO ONE -- IF LESS
C                  THAN THREE VALUES ARE INPUT, THE REMAINING VALUE(S)
C                  WILL DEFAULT TO ZERO(ES))
C
C
C     SOURCE DATA FILE (INPUT BY SOURCE)
C
C     JSIC       - SIC CODE
C     JSITE      - SITE CODE
C     JPROC      - PROCESS CODE
C     JPJ        - POLITICAL JURISDICTION
C     SOURCE(3)  - HORIZONTAL AND VERTICAL COORDINATES (KILOMETERS) AND
C                  AREA (SQUARE KILOMETERS) OF THE SOURCE -- AREA IS
C                  CONVERTED TO SIDE OF EQUIVALENT SQUARE
C                - FOR POINT SOURCES THE AREA WILL BE CONSIDERED TO BE
C                  ZERO
C     SINTEN(2)  - EMISSION RATE FOR EACH POLLUTANT (SO2,PART)  (TONS
C                  PER DAY)
C     HS         - STACK HEIGHT (METERS)
C     TS         - STACK EXIT TEMPERATURE (DEGREES KELVIN)
C     EPLUME     - NORMALIZED PLUME RISE VALUE (SQUARE METERS PER
C                  SECOND)
C                - IF EPLUME, THE STACK EXIT TEMPERATURE, DIAMETER AND
C                  VELOCITY VALUES ARE ALL ZERO, THE STACK HEIGHT VALUE
C                  GIVEN REPRESENTS AN EFFECTIVE STACK HEIGHT VALUE
C                - FOR AREA SOURCES, THE EFFECTIVE STACK HEIGHT (IN THIS
C                  CASE "EFFECTIVE HEIGHT OF RELEASE") CONCEPT IS ALWAYS
C                  USED
C                - IF EPLUME IS GREATER THAN ZERO, IT WILL ALWAYS BE
C                  USED TO DETERMINE THE EFFECTIVE STACK HEIGHT
C     DS         - STACK EXIT DIAMETER (METERS)
C     VS         - STACK EXIT VELOCITY (METERS PER SECOND)
C
C
C     PROGRAM MESSAGES
C
C     END OF SOURCE FILE ENCOUNTERED -- RUN TERMINATED
C     DPTHMX, WNDFRQ, TA, PA MUST BE ALL NON-ZERO -- RUN TERMINATED
C                  DPTHMX LESS THAN OR EQUAL TO ZERO
C                  WNDFRQ CONTAINS A VALUE LESS THAN ZERO
C                  TA LESS THAN OR EQUAL TO ZERO
```

```
C                    PA LESS THAN OR EQUAL TO ZERO
C      IMPROPER RECEPTOR INPUT -- RUN TERMINATED
C              (THE GRID SYSTEM AND/OR THE NON-GRID RECEPTOR SUBSCRIPTS
C               DO NOT AGREE WITH PROGRAM REQUIREMENTS)
C                    INCRX * INCRY LESS THAN ZERO
C                    INCRX * INCRY GREATER THAN 225
C                    IADD LESS THAN ZERO
C                    IADD GREATER THAN 50
C                    INCRX * INCRY + IADD GREATER THAN 275
C                    INCRX * INCRY * DELTA + IADD LESS THAN OR EQUAL TO
C                      ZERO (BOTH THE GRID SYSTEM AND THE NON-GRID
C                      RECEPTORS WERE OMITTED)
C      IREG NOT EQUAL TO 0, 1, OR 2 -- RUN TERMINATED
C
C
C      COMMON BLOCK STRUCTURE
C
C      COMMON /AIRQ/ AQSTAN(2),SGDS(12),SGDP(12),SO2AVG(5),PARAVG(5),
C     1              SO2PER(3),PARPER(3)
C     2       /INPT/ REGION(6),DATE(5),DPTHMX,WNDFRQ(6,16,5),TA,PA,
C     3              BLIFE(2),BACKGR(2),IPOLU1,IPUNCH,ISTAT,NSORCE
C     4       /RCPT/ NRECEP,INCRX,INCRY,IADD,DELTA,RBASE(2),XRECEP(2,50),
C     5              RECEPT(2,275),CPOLUT(2,275),PTCON(2,275),
C     6              JRECEP(2,275),POLUT5(2,5)
C     7       /RGSN/ IREG,SO2CAL(2),PARCAL(2),NSO2,NPART,SO2QB(3,100),
C     8              PARQB(3,100),AC(2),BC(2),R(2),RTABLE(2),JTYPE(2)
C     9       /SLCT/ NSEL5,NSEL12,ICONS(5),ICONP(5),ISTATS(12),
C     A              ISTATP(12),XP(2,12)
C     B       /XTRM/ ZMIN(2),ZMAX(2),INC(2)
C
C      INTEGER*2 IPOLU1,IPUNCH,ISTAT,NSORCE,NRECEP,INCRX,INCRY,IADD,
C     1          JRECEP,NSO2,NPART,JTYPE,NSEL5,NSEL12,ICONS,ICONP,ISTATS,
C     2          ISTATP,INC
C
C
C      CALLING LIST STRUCTURE
C
C      CALL SUBR (N,JCODE,PLUME,SOURCE,SINTEN,CS)
C
C      JCODE(N,4) = JSIC(N) + JSITE(N) + JPROC(N) + JPJ(N)
C      PLUME(N,5) = HS(N) + VS(N) + DS(N) + TS(N) + EPLUME(N)
C      SOURCE(3,N)
C      SINTEN(2,N)
C      CS(2,N)
C
C      INTEGER*2 JCODE
C
C
       CALL DIM
C
C
       STOP
C
C
0003   END
```

NOT REPRODUCIBLE

SUBPROGRAM BLOCK DATA

PURPOSE

To initialize variables in the common blocks.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT VARIABLES

AIRQ Common block containing the ambient air quality standards and input statistical data (see MAIN listing for definition of variables).

INPT Common block containing literals, meteorological data, and option flags (see MAIN listing for definition of input variables). The following calculated variable is contained in this block:

NSORCE - Number of sources read from the Source File.

RCPT Common block containing receptor data (see MAIN listing for definition of input variables). The following calculated variables are contained in this block:

RECEPT - Array containing the X and Y locations of the input receptor system.

CPOLUT - Calibrated pollutant concentration for each pollutant at each receptor.

PTCON - Calibrated point source pollutant concentration for each pollutant at each receptor.

JRECEP - Array of receptor numbers in descending order of concentration value.

POLUT5 - Calibrated pollutant concentration of the five output receptors for pollutant concentrations above standard.

RGSN Common block containing the calibration data (see MAIN listing for definitions of input variables). The following calculated variables are contained in this block:

AC = "Y" intercept for regression line.

BC - slope of regression line.

R - correlation of coefficient of regression line.

RTABLE - 5% confidence level value.

JTYPE - Flag indication statistical significance of correlation.

SLCT Common block containing the receptor definition for output tables (see MAIN listing for definitions of input variables). The following calculated variables is contained in this block:

XP - Array of concentration values for statistical data output.

XTRM Common block containing the minimum and maximum concentration values from the Receptor Concentration Data and the number of receptors contained in the ordered array (Subprogram EXCEED).

```
0001            BLOCK DATA
C
C***********************************************************************
C*                                                                     *
C*    TITLE:    BLOCK DATA                                             *
C*                                                                     *
C*    AUTHOR:   TRW SYSTEMS GROUP                                      *
C*              WASHINGTON OPERATIONS                                  *
C*              WASHINGTON, D.C.                                       *
C*                                                                     *
C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                        *
C*                                                                     *
C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                             *
C*                                                                     *
C***********************************************************************
C
C
0002            COMMON /AIRQ/ AQSTAN(2),SGDS(12),SGDP(12),SO2AVG(5),PARAVG(5),
               1              SO2PER(3),PARPER(3)
C
0003            COMMON /INPT/ REGION(6),DATE(5),DPTHMX,WNDFRQ(6,16,5),TA,PA,
               1              BLIFE(2),BACKGR(2),IPOLU1,IPUNCH,ISTAT,DUM21(1)
C
0004            COMMON /RCPT/ DUM31(1),INCRX,INCRY,IADD,DELTA,RBASE(2),
               1              XRECEP(2,50),DUM32(550),CPOLUT(2,275),DUM33(835)
C
0005            COMMON /RGSN/ IREG,SO2CAL(2),PARCAL(2),NSC2,NPART,SO2OB(3,100),
               1              PAROB(3,100),DUM41(4),R(2),STABLE(2),JTYPE(2)
C
0006            COMMON /SLCT/ NSEL5,NSEL12,ICONS(5),ICONP(5),ISTATS(12),
               1              ISTATP(12),DUM51(24)
C
0007            COMMON /XTRM/ ZMIN(2),ZMAX(2),DUM61(1)
C
C
0008            INTEGER*2 IPOLU1,IPUNCH,ISTAT,DUM21,DUM31,INCRX,INCRY,IADD,NSC2,
               1          NPART,JTYPE,NSEL5,NSEL12,ICONS,ICONP,ISTATS,ISTATP
C
C
0009            DATA AQSTAN/2*0.0/,SGDS/12*0.0/,SGDP/12*0.0/,SO2AVG/5*0.0/,
               1     PARAVG/5*0.0/,SO2PER/3*0.0/,PARPER/3*0.0/
C
0010            DATA REGION/6*'     '/,DATE/5*'     '/,DPTHMX/-9999.9/,
               1     WNDFRQ/480*0.0/,TA/-9999.9/,PA/-9999.9/,BLIFE/2*0.0/,
               2     BACKGR/2*0.0/,IPOLU1/0/,IPUNCH/' '/,ISTAT/0/
C
0011            DATA INCRX/0/,INCRY/0/,IADD/0/,DELTA/0.0/,RBASE/2*0.0/,
               1     XRECEP/100*0.0/,CPOLUT/550*0.0/
C
0012            DATA IREG/-1/,SO2CAL/0.0,1.0/,PARCAL/0.0,1.0/,NSC2/0/,NPART/0/,
               1     SO2OB/300*0.0/,PAROB/300*0.0/,R/2*0.0/,STABLE/2*0.0/,
               2     JTYPE/2*0/
C
0013            DATA NSEL5/0/,NSEL12/0/,ICONS/5*0/,ICONP/5*0/,ISTATS/12*0/,
               1     ISTATP/12*0/
C
0014            DATA ZMIN/2*9.0E10/,ZMAX/2*-9.0E10/
C
C
0015            END
```

NOT REPRODUCIBLE

SUBPROGRAM DIM

PURPOSE

To provide the program with a simple method of changing the maximum number of sources. The arrays that are indexed by sources are given their absolute dimension, initialized, and then passed to other subprograms through the calling list of the calling program. By updating the source allocation subscript in the DIMENSION statement and in the DATA statement, the user can alter the storage capability to meet the source inventory requirements.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE

The variable N will contain the maximum number of sources allowed. Variable dimension size and arrays are sometimes passed through more than one level of subprogram, i.e., to a subprogram that calls another subprogram, passing it dimension information. Whenever these arguments appear in a subprogram merely to pass them to the next subprogram called, they will be represented as dummy arguments.

SUBROUTINES

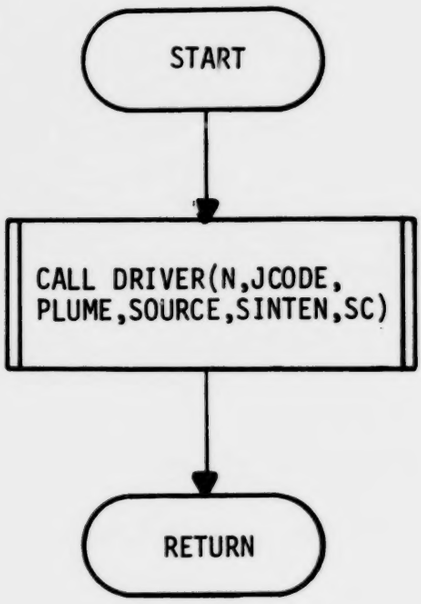
DRIVER Calls the four major APCP subprograms (INPUT, CONVRT, DIFMOD, SELECT).

INPUT/OUTPUT VARIABLES

N	Maximum number of sources.
JCODE	SIC code + site number + process code + political jurisdiction number.

PLUME(N,5)	Stack height + exit velocity + diameter + exit temperature + normalized plume rise.
SOURCE	X location, Y location and area size.
SINTEN	SO_x emission rate, particulate emission rate.
CS	Uncalibrated concentration of pollutant L from source J (at receptor IR).

SUBROUTINE DIM



```
0001            SUBROUTINE DIM
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    DIM                                              *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*    ABSTRACT:  ALLOWANCE IS MADE FOR TWO THOUSAND (2000) SOURCES *
                C*                                                               *
                C*****************************************************************
                C
                C
0002            DIMENSION JCODE(2000,4),PLUME(2000,5),SOURCE(3,2000),          *
               1          SINTEN(2,2000),CS(2,2000)
                C
0003            INTEGER*2 JCODE
                C
0004            DATA N/2000/,PLUME/10000*0.0/,SOURCE/6000*0.0/                 *
                C
                C
0005            CALL DRIVER (N,JCODE,PLUME,SOURCE,SINTEN,CS)
                C
                C
0006            RETURN
                C
                C
0007            END
```

SUBPROGRAM DRIVER

PURPOSE

To call the four major APCP subprograms.

CALLING SEQUENCE

Call DRIVER (N, DUMMY 1, DUMMY 2, DUMMY 3, DUMMY 4, DUMMY 5).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE

Call subprograms INPUT, CONVRT, DIFMOD, and, if requested, SELECT.

SUBROUTINES

INPUT Reads and writes NAMELIST data and prints error messages for selected variables.

CONVRT Preprocesses source data; prints Source Data, Stability Wind Rose Data, and Regional Data.

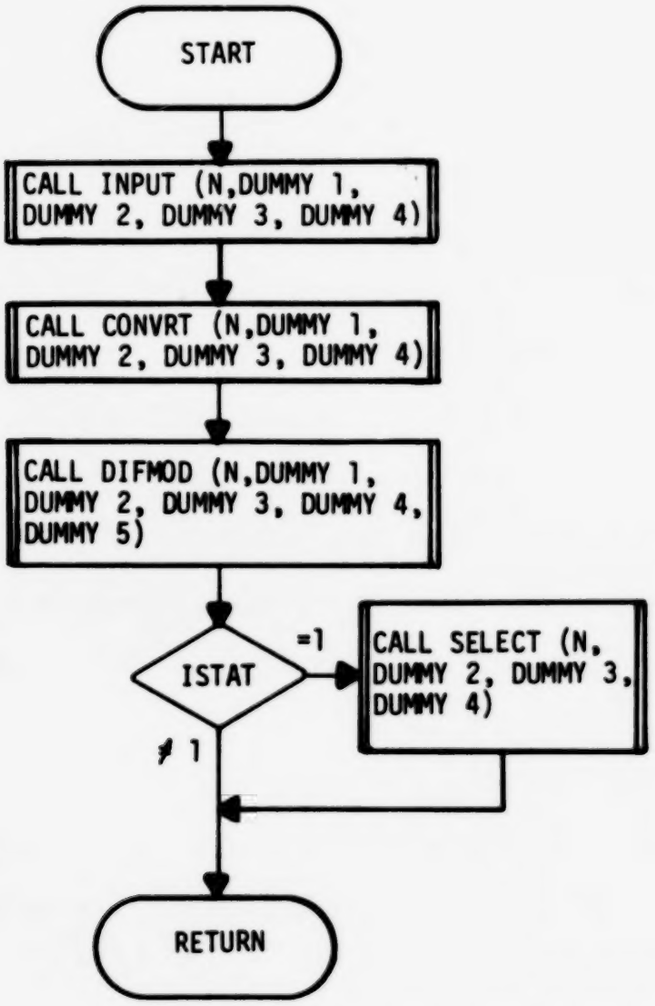
DIFMOD Subdriver controlling calibration and mean concentration calculations; prints Regression Parameters and Receptor Concentration Data.

SELECT Subdriver controlling calculations for Pollutant Concentrations Above Standard, Statistical Data and Source Contribution data; prints Source Contribution data.

INPUT/OUTPUT VARIABLES

Common block INPT (defined in BLOCK DATA) and calling sequence variables (defined in DIM).

SUBROUTINE DRIVER (N,DUMMY 1,
DUMMY 2, DUMMY 3, DUMMY 4,
DUMMY 5)



```
0001            SUBROUTINE DRIVER (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4,DUMMY5)
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    DRIVER                                           *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*****************************************************************
                C
                C
0002            COMMON /INPT/ DUM21(499),ISTAT,DUM22(1)
                C
0003            DIMENSION DUMMY1(N,2),DUMMY2(N,5),DUMMY3(3,N),DUMMY4(2,N),
                1         DUMMY5(2,N)
                C
0004            INTEGER*2 ISTAT,DUM22
                C
                C
0005            CALL INPUT (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4)
                C
0006            CALL CONVRT (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4)
                C
0007            CALL DIFMOD (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4,DUMMY5)
                C
0008            IF(ISTAT.EQ.1) CALL SELECT (N,DUMMY2,DUMMY3,DUMMY4)
                C
                C
0009            RETURN
                C
                C
0010            END
```

SUBPROGRAM INPUT

PURPOSE

To read NAMELIST input and the Source File. This routine also tests selected NAMELIST inputs for errors.

CALLING SEQUENCE

CALL INPUT (N, JCODE, PLUME, SOURCE, SINTEN).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

NAMELIST Input Data (CARD READER)

SOURCE FILE DATA (DISK)

OUTPUT

NAMELIST Input (PRINTER)

Error Messages (PRINTER)

PROCEDURE

1. Read NAMELIST Data.
2. Read Source File Data.
3. Test input Meteorological Data.
4. Test input option flag.

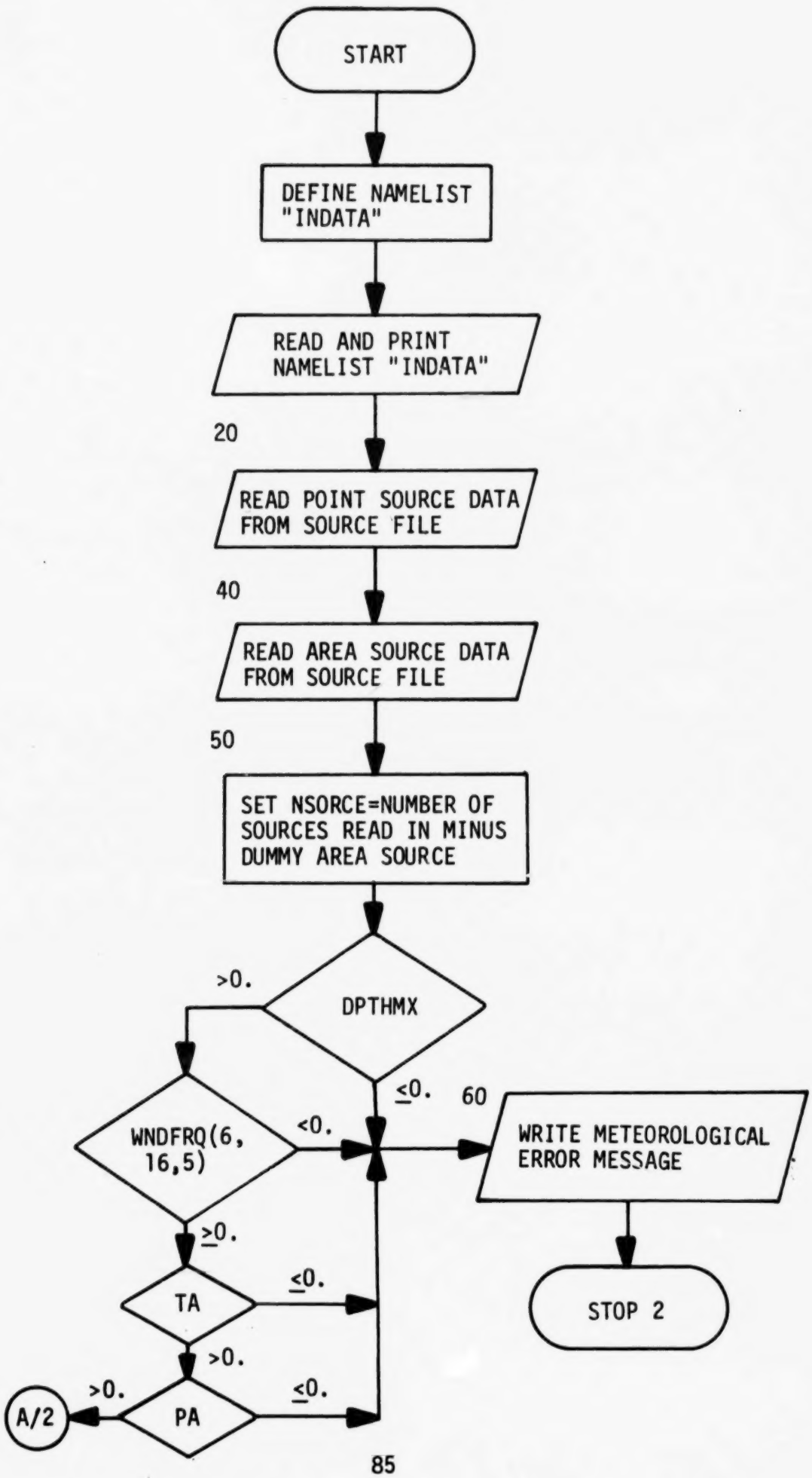
SUBROUTINES

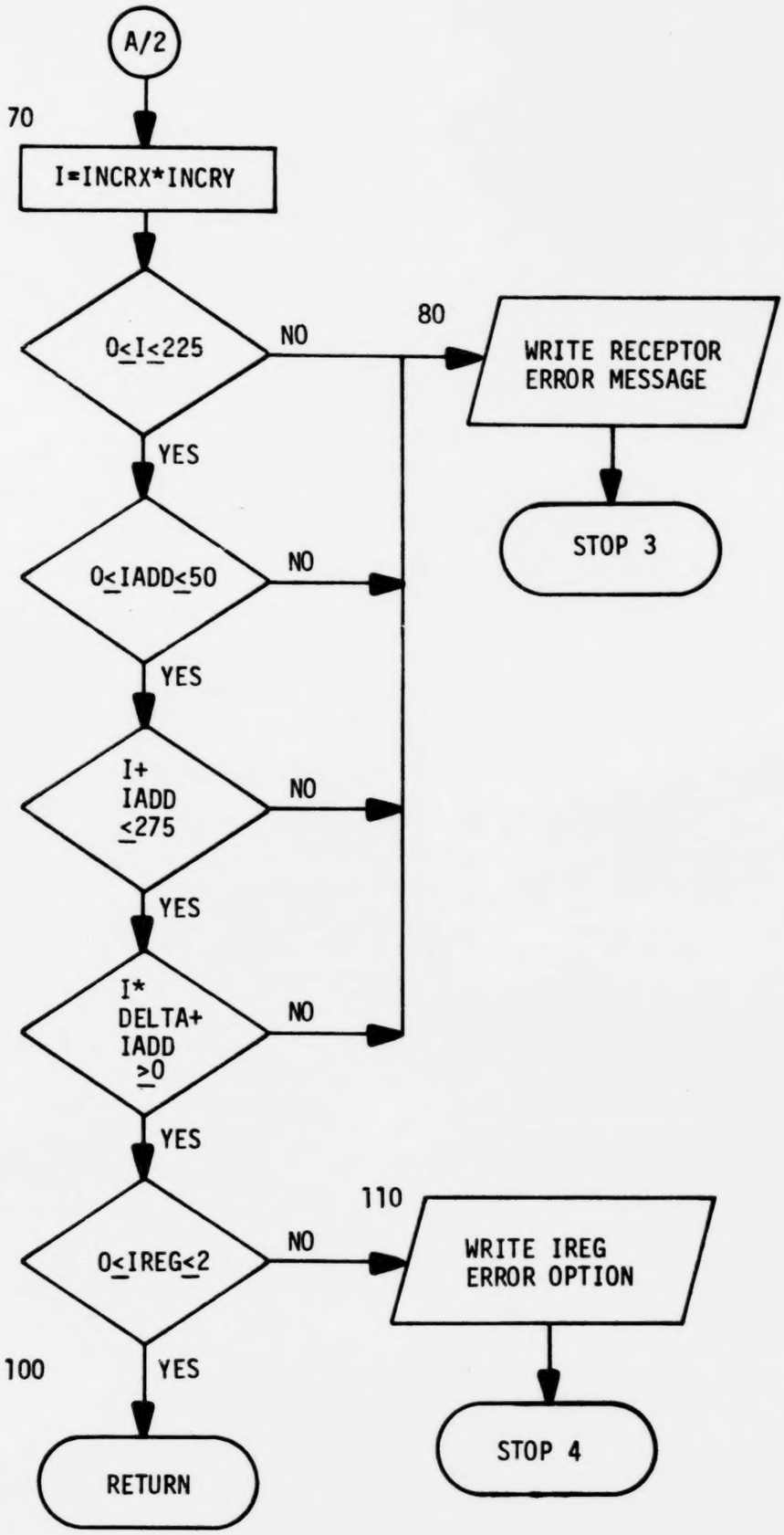
None.

INPUT/OUTPUT VARIABLES

Common blocks AIRQ, INPT, RCPT, RGSN, and SLCT (defined in BLOCK DATA) and the calling sequence variables (defined in DIM).

SUBROUTINE INPUT(N,JCODE,
PLUME, SOURCE, SINTEN)




A/2
70
I=INCRX*INCRY
0≤I≤225
NO
80
WRITE RECEPTOR ERROR MESSAGE
STOP 3
YES
0≤IADD≤50
NO
YES
I+ IADD ≤275
NO
YES
I* DELTA+ IADD ≥0
NO
YES
0≤IREG≤2
NO
110
WRITE IREG ERROR OPTION
STOP 4
100
YES
RETURN

```
0001          SUBROUTINE INPUT (N,JCODE,PLUME,SOURCE,SINTEN)
        C
        C     ***********************************************************************
        C     *                                                                     *
        C     *     TITLE:    INPUT                                                 *
        C     *                                                                     *
        C     *     AUTHOR:   TRW SYSTEMS GROUP                                     *
        C     *               WASHINGTON OPERATIONS                                 *
        C     *               WASHINGTON, D.C.                                      *
        C     *                                                                     *
        C     *     COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                       *
        C     *                                                                     *
        C     *     LANGUAGE USED:  FORTRAN IV - G LEVEL                            *
        C     *                                                                     *
        C     ***********************************************************************
        C
        C
0002          COMMON /AIRQ/ AQSTAN(2),SGDS(12),SGDP(12),SO2AVG(5),PARAVG(5),
             1              SO2PER(3),PARPER(3)
        C
0003          COMMON /INPT/ REGION(6),DATE(5),DPTHMX,WNDFRQ(6,16,5),TA,PA,
             1              BLIFE(2),BACKGR(2),IPOLU1,IPUNCH,ISTAT,NSORCE
        C
0004          COMMON /RCPT/ DUM31(1),INCRX,INCRY,IADD,DELTA,RBASE(2),
             1              XRECEP(2,50),DUM32(1935)
        C
0005          COMMON /RGSN/ IREG,SO2CAL(2),PARCAL(2),NSO2,NPART,SO2OB(3,100),
             1              PAROB(3,100),DUM41(9)
        C
0006          COMMON /SLCT/ NSEL5,NSEL12,ICONS(5),ICONP(5),ISTATS(12),
             1              ISTATP(12),DUM51(24)
        C
0007          DIMENSION JCODE(N,4),PLUME(N,5),SOURCE(3,N),SINTEN(2,N)
        C
0008          INTEGER*2 JCODE,IPOLU1,IPUNCH,ISTAT,NSORCE,DUM31,INCRX,INCRY,IADD,
             1          NSO2,NPART,NSEL5,NSEL12,ICONS,ICONP,ISTATS,ISTATP
        C
0009          DIMENSION RUNEND(5)
        C
0010          DATA RUNEND/' -- ','RUN ','TERM','INAT','ED  '/
        C
0011          NAMELIST /INDATA/ REGION,DATE,IPOLU1,DPTHMX,WNDFRQ,TA,PA,BLIFE,
             1                  BACKGR,INCRX,INCRY,DELTA,RBASE,IREG,SO2CAL,
             2                  PARCAL,NSO2,NPART,SO2OB,PAROB,IADD,XRECEP,
             3                  IPUNCH,ISTAT,AQSTAN,NSEL5,ICONS,ICONP,NSEL12,
             4                  ISTATS,ISTATP,SGDS,SGDP,SO2AVG,PARAVG,SO2PER,
             5                  PARPER
        C
        C
0012          READ(5,INDATA,END=10)
0013          WRITE(6,INDATA)
        C
```

```
0014                GO TO 20
                C
0015             10 CONTINUE
                C
0016                WRITE(6,120)
0017                WRITE(6,130) RUNEND
                C
0018                STOP 1
                C
0019             20 CONTINUE
                C
0020                I=1
                C
0021                READ(11,140,END=50)
                C
0022             30 CONTINUE
0023                READ(11,150,END=50) JCODE(I,1),JCODE(I,2),JCODE(I,3),SOURCE(1,I),
                   1                    SOURCE(2,I),JCODE(I,4),SINTEN(1,I),
                   2                    SINTEN(2,I),PLUME(I,1),PLUME(I,4),PLUME(I,5),
                   3                    PLUME(I,3),PLUME(I,2)
0024                IF(JCODE(I,1).EQ.9999) GO TO 40
0025                I=I+1
0026                GO TO 30
                C
0027             40 CONTINUE
                C
0028                READ(11,160,END=50) JCODE(I,1),JCODE(I,2),JCODE(I,3),SOURCE(1,I),
                   1                    SOURCE(2,I),SOURCE(3,I),JCODE(I,4),PLUME(I,1),
                   2                    SINTEN(1,I),SINTEN(2,I)
0029                I=I+1
0030                GO TO 40
                C
0031             50 CONTINUE
                C
                C
0032                IF(I.GT.1) NSOURCE=I-1
                C
                C
0033                IF(DPTHMX.LE.0.0) GO TO 60
                C
0034                IF(WNDFRQ(6,16,5).LT.0.0) GO TO 60
                C
0035                IF(TA.LE.0.0) GO TO 60
                C
0036                IF(PA.LE.0.0) GO TO 60
                C
0037                GO TO 70
                C
0038             60 CONTINUE
                C
0039                WRITE(6,120)
0040                WRITE(6,170) RUNEND
```

```
C
0041        STOP 2
C
0042     70 CONTINUE
C
C
0043        I=INCRX*INCRY
0044        IF(I.LT.0.OR.I.GT.225) GO TO 80
C
0045        IF(IADD.LT.0.OR.IADD.GT.50) GO TO 80
C
0046        IF(I+IADD.GT.275) GO TO 80
0047        IF(I*IFIX(DELTA+C.0C01)+IADD.LE.0) GO TO 80
C
0048        GO TO 90
C
0049     80 CONTINUE
C
0050        WRITE(6,120)
0051        WRITE(6,130) RUNEND
C
0052        STOP 3
C
0053     90 CONTINUE
C
C
0054        IF(IREG.LT.0.OR.IREG.GT.2) GO TO 100
C
0055        GO TO 110
C
0056    100 CONTINUE
C
0057        WRITE(6,120)
0058        WRITE(6,190) RUNEND
C
0059        STOP 4
C
0060    110 CONTINUE
C
C
0061        RETURN
C
C
0062    120 FORMAT('1'////////////////////)
0063    130 FORMAT(43X,'END OF SOURCE FILE ENCOUNTERED',5A4)
C
0064    140 FORMAT(80X)
C
0065    150 FORMAT(3X,I4,I3,I2,23X,F4.1,F5.1,I2,2X,2F7.3,106X,3F7.3,15X,F7.5,
           1       F7.4,3X)
C
0066    160 FORMAT(3X,2I4,I1,F4.1,F5.1,F4.1,I2,3F7.3)
C
0067    170 FORMAT(36X,'DPTHMX, WNDFRC, TA, PA MUST BE ALL NON-ZERO',5A4)
C
0068    180 FORMAT(46X,'IMPROPER RECEPTOR INPUT',5A4)
C
0069    190 FORMAT(44X,'IREG NOT EQUAL TO 0, 1, OR 2',5A4)
C
C
0070        END
```

SUBPROGRAM CONVRT

PURPOSE

To preprocess the source data and print the input parameters.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Source Data Table (PRINTER)

Stability Wind Rose Data Table (PRINTER)

Regional Data Table (PRINTER)

PROCEDURE

1. Print data tables.
2. Convert area sources to the length of a side of an equivalent square.
3. Translate coordinates to center of square area.
4. Convert emission rate from tons/day to µg/second.
5. Extract background concentration from measured pollutant concentration value.

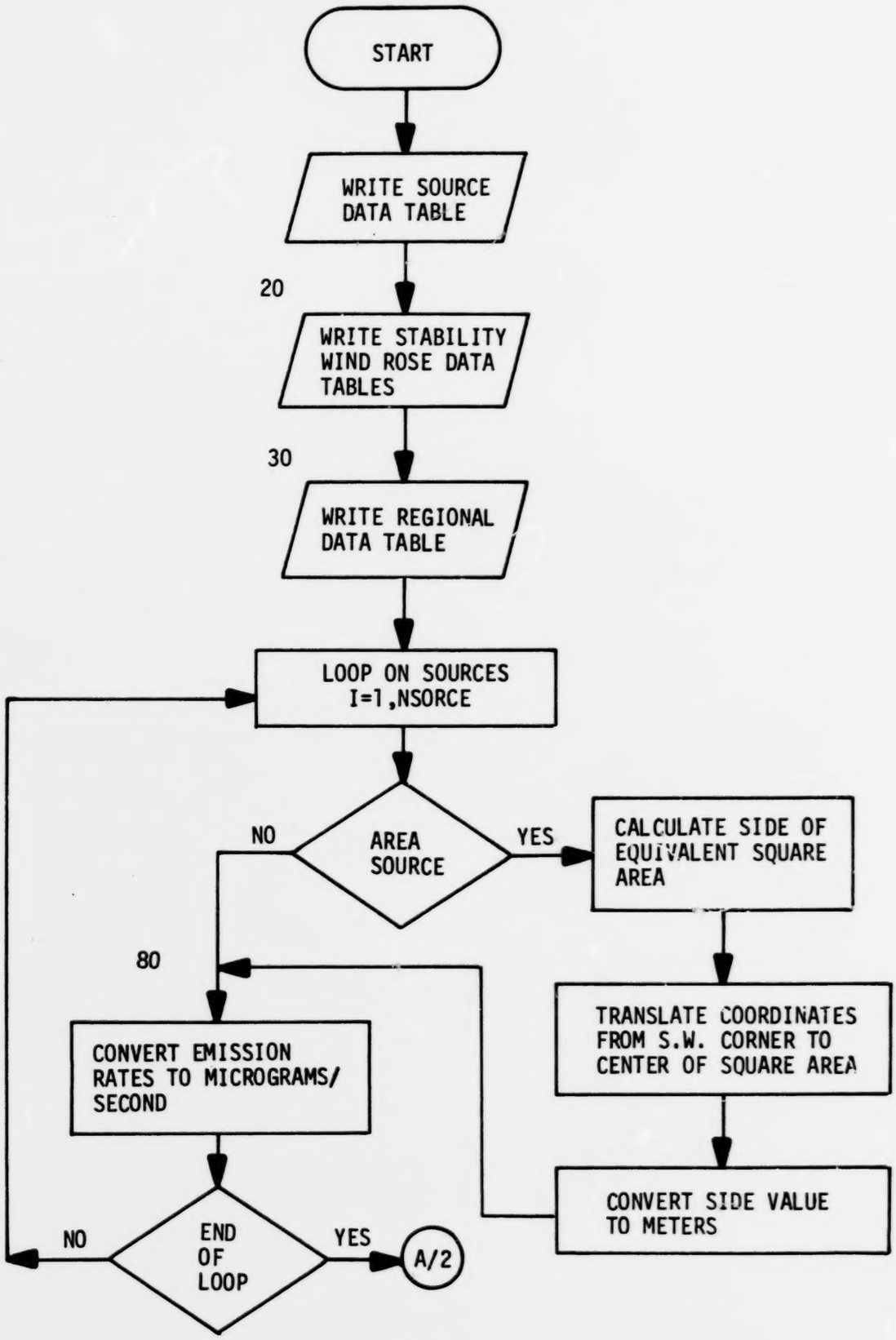
SUBROUTINES

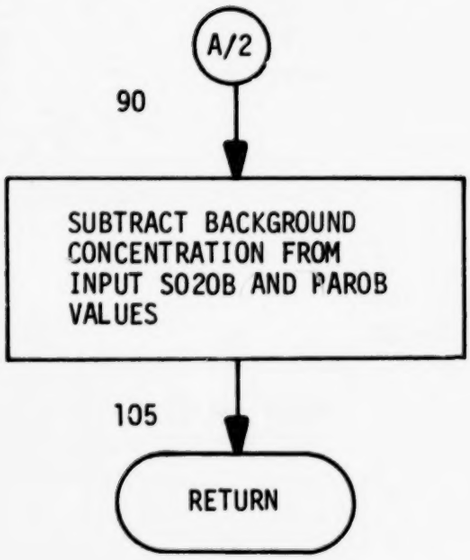
None

INPUT/OUTPUT VARIABLES

Common blocks INPT and RGSN (defined in BLOCK DATA) and calling sequence variables (defined in DIM).

SUBROUTINE CONVRT (N,JCODE,
PLUME,SOURCE,SINTEN)




A/2
90
SUBTRACT BACKGROUND CONCENTRATION FROM INPUT SO2OB AND PAROB VALUES
105
RETURN

```
0001            SUBROUTINE CONVRT (N,JCODE,PLUME,SOURCE,SINTEN)
                C
                C*****************************************************************
                C*                                                               *
                C*     TITLE:    CONVRT                                          *
                C*                                                               *
                C*     AUTHOR:   TRW SYSTEMS GROUP                               *
                C*               WASHINGTON OPERATIONS                           *
                C*               WASHINGTON, D.C.                                *
                C*                                                               *
                C*     COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                 *
                C*                                                               *
                C*     LANGUAGE USED:  FORTRAN IV - G LEVEL                      *
                C*                                                               *
                C*****************************************************************
                C
                C
0002                 COMMON /INPT/ REGION(6),DATE(5),OPTHMX,WNDFRQ(6,16,5),TA,PA,
                1               BLIFE(2),BACKGR(2),DUM21(3),NSORCE
                C
0003                 COMMON /RGSN/ DUM41(5),NSO2,NPART,SO2DB(3,100),PARDB(3,100),
                1               DUM42(4)
                C
0004                 DIMENSION JCODE(N,4),PLUME(N,5),SOURCE(3,N),SINTEN(2,N)
                C
0005                 INTEGER*2 JCODE,DUM21,NSORCE,NSO2,NPART
                C
                C
0006                 DIMENSION WD(16)
                C
0007                 DATA WD/'N   ','NNE ','NE  ','ENE ','E   ','ESE ','SE  ','SSE ',
                1       'S   ','SSW ','SW  ','WSW ','W   ','WNW ','NW  ','NNW '/
                C
                C
0008                 LINE=0
0009                 L=0
0010                 DO 20 I=1,NSORCE
0011                 M=0
                C
0012                 IF(LINE.EQ.0) WRITE(6,110) REGION,DATE
                C
0013                 LINE=LINE+1
                C
0014                 TEMP=PLUME(I,3)
0015                 IF(PLUME(I,5).LT.0.001) GO TO 10
                C
0016                 TEMP=PLUME(I,5)
0017                 M=1
0018                 L=1
                C
0019            10 CONTINUE
                C
```

```
0020                  WRITE(6,120) I,JCODE(I,1),JCODE(I,2),JCODE(I,3),SOURCE(1,I),
                     1             SOURCE(2,I),SOURCE(3,I),SINTEN(1,I),SINTEN(2,I),
                     2             PLUME(I,1),TEMP,PLUME(I,2),PLUME(I,4)
                C
0021                  IF(M.EQ.1) WRITE(6,130)
                C
0022                  IF(LINE.NE.40.AND.I.NE.NSORCE) GO TO 20
                C
0023                  LINE=0
0024                  WRITE(6,140)
0025                  IF(L.EQ.0) GO TO 20
                C
0026                  L=0
0027                  WRITE(6,150)
                C
0028               20 CONTINUE
                C
                C
0029                  DO 30 K=1,5
                C
0030                  WRITE(6,210) REGION,DATE,K,(WD(J),(WNDFRQ(I,J,K),I=1,6),J=1,16)
                C
0031               30 CONTINUE
                C
                C
0032                  WRITE(6,310) REGION,DATE,TA,PA,DPTHMX
                C
0033                  IF(BLIFE(1).GT.0.001) GO TO 40
                C
0034                  WRITE(6,320)
0035                  GO TO 50
                C
0036               40 CONTINUE
                C
0037                  WRITE(6,330) BLIFE(1)
                C
0038               50 CONTINUE
                C
0039                  IF(BLIFE(2).GT.0.001) GO TO 60
                C
0040                  WRITE(6,340)
0041                  GO TO 70
                C
0042               60 CONTINUE
                C
0043                  WRITE(6,350) BLIFE(2)
                C
0044               70 CONTINUE
                C
0045                  WRITE(6,360) BACKGR
                C
                C
```

```
0046                DO 90 I=1,NSORCE
                C
0047                AREA=SOURCE(3,I)
0048                IF(AREA.LT.0.001) GO TO 80
                C
0049                TEMP=SQRT(AREA)
0050                SOURCE(1,I)=SOURCE(1,I)+0.5*TEMP
0051                SOURCE(2,I)=SOURCE(2,I)+0.5*TEMP
0052                SOURCE(3,I)=1000.0*TEMP
                C
0053             80 CONTINUE
                C
0054                SINTEN(1,I)=SINTEN(1,I)*10.5E6
0055                SINTEN(2,I)=SINTEN(2,I)*10.5E6
                C
0056             90 CONTINUE
                C
0057                DO 100 I=1,NSO2
                C
0059                SO2OB(3,I)=SO2OB(3,I)-BACKGR(1)
                C
0059            100 CONTINUE
                C
0060                DO 105 I=1,NPART
                C
0061                PAROB(3,I)=PAROB(3,I)-BACKGR(2)
                C
0062            105 CONTINUE
                C
                C
0063                RETURN
                C
0064            110 FORMAT('1',10X,'REGION: ',6A4,59X,'DATE: ',5A4//
                   1        7X,30('____')/
                   2        6X,'|',120X,'|'/
                   3        6X,'|',54X,'SOURCE DATA',55X,'|'/
                   4        6X,'|',30('____'),'|'/
                   5        6X,'|',8X,'|',3(6X,'|'),17X,'|',9X,'|',19X,'|',3(10X,'|'),
                   6        9X,'|'/
                   7        6X,'| SOURCE | SIC  | SITE | PROC | SOURCE LOCATION ',
                   8        '| SOURCE  |   EMISSION RATE ',2X,2('|  STACK',3X),'|',1X,
                   9        2(2X,'EXIT   |')/
                   A        6X,'| NUMBER |',3(' CODE |'),2X,'(KILOMETERS)   |  AREA  ',
                   B        ' |',4X,'(TONS/DAY)',5X,'|  HEIGHT  | DIAMETER | VELOCITY',
                   C        ' |  TEMP   |'/
                   D        6X,'|',8X,3('|',6X),'| HORIZ',5X,'VERT  | (SQ KM) |   ',
                   E        'SO2',6X,'PART',3X,2('| (METERS) '),'| (M/SEC)  |',
                   F        ' (DEG K) |'/
                   G        6X,'|',2('____'),'|',3('______|'),2('____'),2(2('____'),
                   H        '_|'),4('____'),'___|',3(2('____'),'__|'),2('____'),'_|'/
                   I        6X,'|',8X,'|',3(6X,'|'),2(8X,'|'),3(9X,'|'),3(10X,'|'),9X,
                   J        '|')
```

```
C
0065      120 FORMAT(6X,'|',I6,2X,2('|',I5,1X),'|',I4,1X,3(1X,'|',F7.1),2X,
     1         2('|',F8.2,1X),'|',F8.1,2X,2('|',F7.1,3X),'|',F7.1,2X,'|')
C
0066      130 FORMAT('+',T105,'*')
C
0067      140 FORMAT(6X,'|',8X,'|',3(6X,'|'),2(8X,'|'),3(9X,'|'),3(10X,'|'),9X,
     1         '|'/'+',6X,30('____'))
C
0068      150 FORMAT('0'/8X,'* NORMALIZED PLUME RISE VALUE (SQUARE METERS PER',
     1         ' SECOND)')
C
0069      210 FORMAT('1'/////33X,'REGION: ',6A4,12X,'DATE: ',5A4////
     1         55X,'STABILITY WIND ROSE DATA'////
     2         28X,'STABILITY CLASS',I2//70X,'WIND SPEED CLASS'//
     3         52X,'1',9X,'2',9X,'3',9X,'4',9X,'5',9X,'6'/
     4         29X,'WIND DIRECTION'/('0',33X,A4,8X,6F10.5))
C
0070      310 FORMAT('1'//////////////29X,'REGION: ',6A4,19X,'DATE: ',5A4////
     1         32X,17('____'),'_'//60X,'REGIONAL DATA'/
     2         32X,17('____'),'_'////
     3         34X,'AMBIENT TEMPERATURE (DEGREES KELVIN)',19X,'=',F9.1///
     4         34X,'AMBIENT PRESSURE (MILLIBARS)',27X,'=',F9.1///
     5         34X,'MIXING HEIGHT (METERS)',33X,'=',F9.1///
     6         34X,'HALF LIFE (HOURS) FOR:')
C
0071      320 FORMAT('0',63X,'SO2',22X,'=',1X,'INFINITE')
C
0072      330 FORMAT('0',63X,'SO2',22X,'=',F9.1)
C
0073      340 FORMAT('0',63X,'PARTICULATES',13X,'=',1X,'INFINITE')
C
0074      350 FORMAT('0',63X,'PARTICULATES',13X,'=',F9.1)
C
0075      360 FORMAT(//34X,'BACKGROUND CONCENTRATION (MICROGRAMS/CUBIC METER',
     1         ') FOR:'//64X,'SO2',22X,'=',F9.1//
     2         64X,'PARTICULATES',13X,'=',F9.1)
C
0076           END
```

SUBPROGRAM DIFMOD

PURPOSE

To control calibration and mean concentration calculations.

CALLING SEQUENCE

Call DIFMOD (N, DUMMY 1, DUMMY 2, DUMMY 3, DUMMY 4, DUMMY 5).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Regression Parameters (PRINTER)

Receptor Concentration Data (PRINTER)

First Record on Source Contribution File (TAPE)

PROCEDURE

1. Print data tables.
2. Write record on Source Contribution File.
3. Calculate receptor locations from grid data and add additional receptors to array.

SUBROUTINES

CAMP Subdriver for calibration calculations; prints Correlation Data.

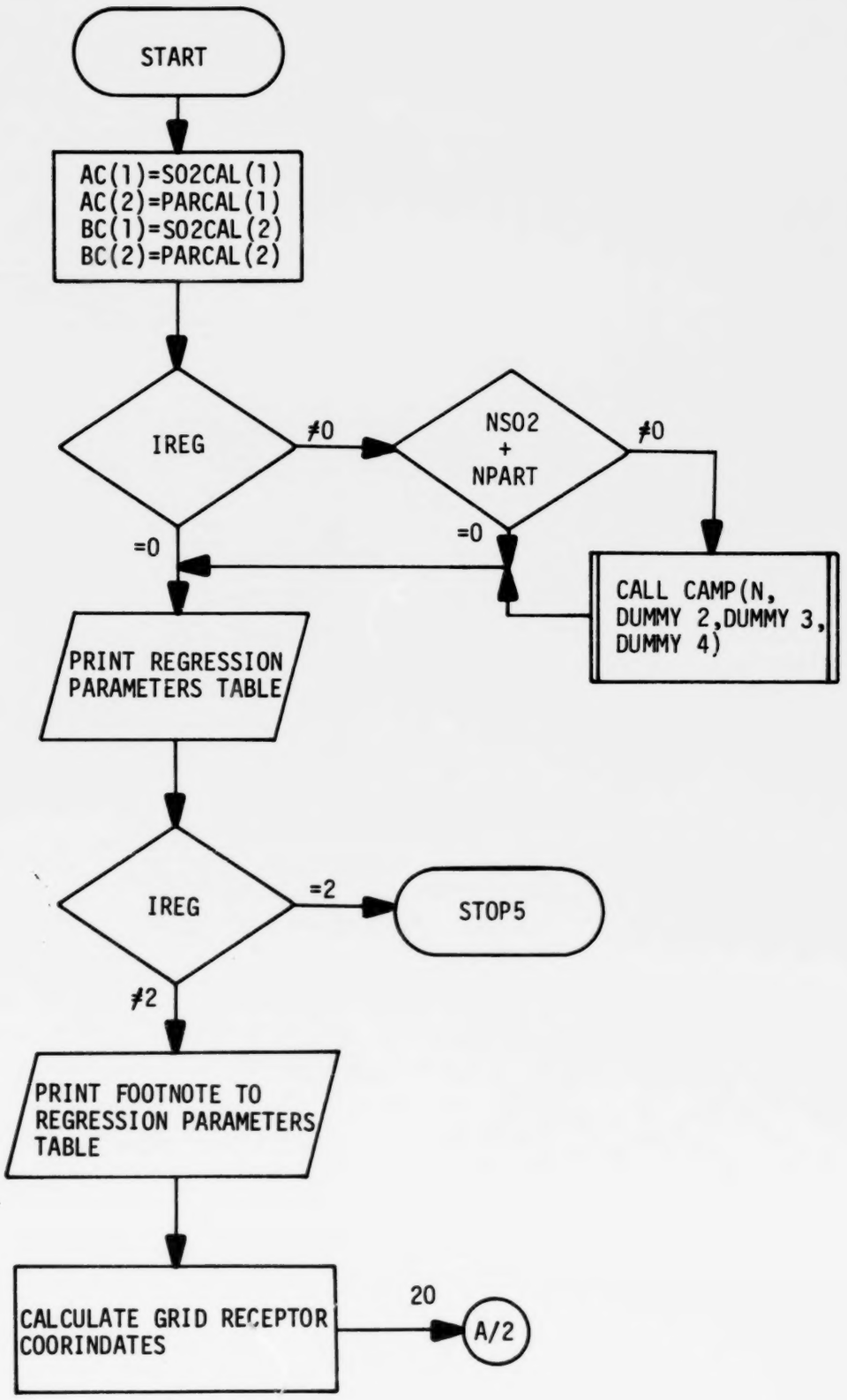
POLUT Calculates calibrated mean concentration values at receptors; writes Receptor Records and Source Records on Source Contribution File.

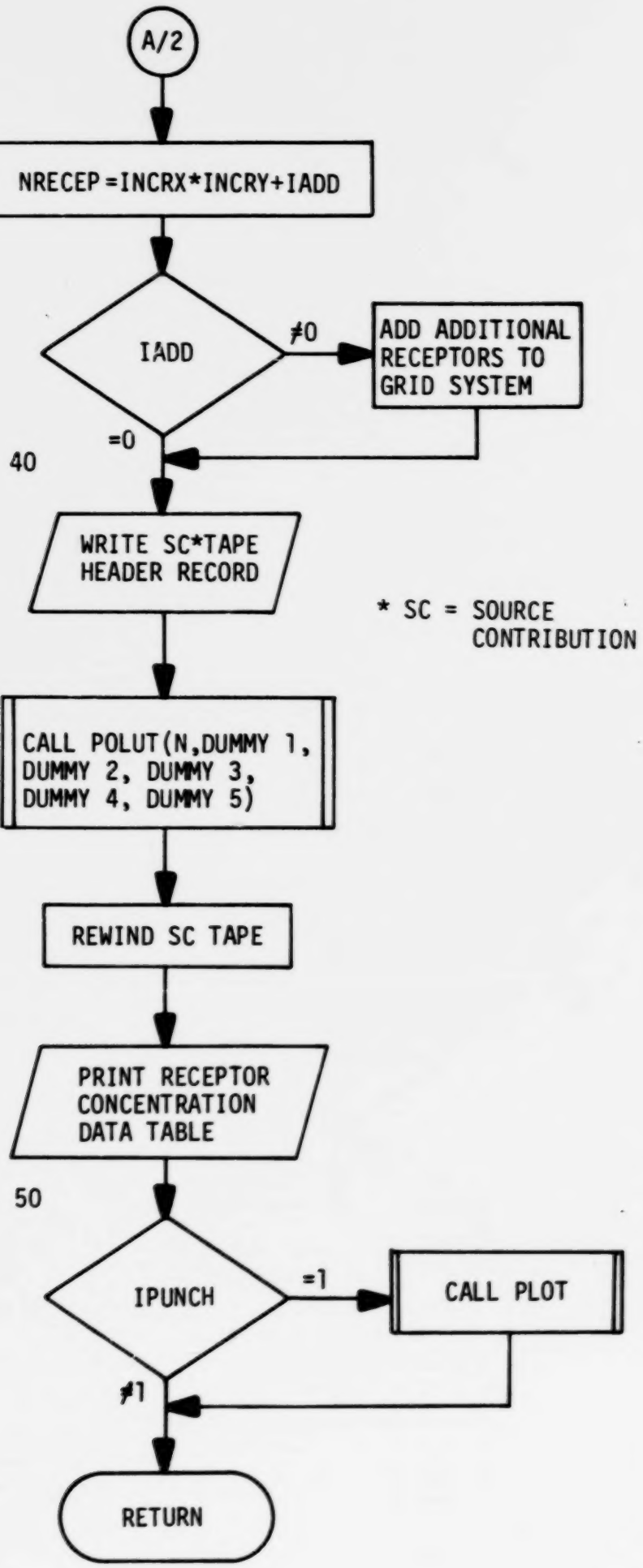
PLOT Punches location and concentration data.

INPUT/OUTPUT VARIABLES

Common blocks INPT, RCPT and RGSM (defined in BLOCK DATA) and calling sequence variables (defined in DIM).

SUBROUTINE DIFMOD (N,DUMMY 1, DUMMY 2,
DUMMY 3, DUMMY 4, DUMMY 5)




A/2
NRECEP=INCRX*INCRY+IADD
IADD
≠0
ADD ADDITIONAL RECEPTORS TO GRID SYSTEM
=0
40
WRITE SC*TAPE HEADER RECORD
* SC = SOURCE CONTRIBUTION
CALL POLUT(N,DUMMY 1, DUMMY 2, DUMMY 3, DUMMY 4, DUMMY 5)
REWIND SC TAPE
PRINT RECEPTOR CONCENTRATION DATA TABLE
50
IPUNCH
=1
CALL PLOT
≠1
RETURN

```
0001          SUBROUTINE DIFMOD (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4,DUMMY5)
        C
        C     ***********************************************************************
        C     *                                                                     *
        C     *     TITLE:    DIFMOD                                                *
        C     *                                                                     *
        C     *     AUTHOR:   TRW SYSTEMS GROUP                                     *
        C     *               WASHINGTON OPERATIONS                                 *
        C     *               WASHINGTON, D.C.                                      *
        C     *                                                                     *
        C     *     COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                       *
        C     *                                                                     *
        C     *     LANGUAGE USED:  FORTRAN IV - G LEVEL                            *
        C     *                                                                     *
        C     ***********************************************************************
        C
        C
0002          COMMON /INPT/ REGION(6),DATE(5),DUM21(485),BACKGR(2),DUM22(1),
             1              IPUNCH,DUM23(1),NSORCE
        C
0003          COMMON /RCPT/ NRECEP,INCRX,INCRY,IADD,DELTA,RBASE(2),XRECEP(2,50),
             1              RECEPT(2,275),CPOLUT(2,275),DUM31(835)
        C
0004          COMMON /RGSN/ IREG,SO2CAL(2),PARCAL(2),NSO2,NPART,DUM41(600),
             1              AC(2),BC(2),R(2),RTABLE(2),JTYPE(2)
        C
0005          DIMENSION DUMMY1(N,2),DUMMY2(N,5),DUMMY3(3,N),DUMMY4(2,N),
             1          DUMMY5(2,N)
        C
0006          INTEGER*2 DUM22,IPUNCH,DUM23,NSORCE,NRECEP,INCRX,INCRY,IADD,NSO2,
             1          NPART,JTYPE
        C
        C
0007          DIMENSION TYPE(8,3)
        C
        C
0008          DATA TYPE/'    ',' VAL','UES ','NOT ','COMP','UTED','    ','  | ',
             1          'NOT ','STAT','ISTI','CALL','Y SI','GNIF','ICAN','T | ',
             2          '  ST','ATIS','TICA','LLY ','SIGN','IFIC','ANT ','  | '/
        C
        C
0009          AC(1)=SO2CAL(1)
0010          AC(2)=PARCAL(1)
0011          BC(1)=SO2CAL(2)
0012          BC(2)=PARCAL(2)
        C
0013          IF(IREG.NE.0.AND.NSO2+NPART.NE.0) CALL CAMP (N,DUMMY2,DUMMY3,
             1                                             DUMMY4)
        C
0014          WRITE(6,110) REGION,DATE,
             1             SO2CAL(1),SO2CAL(2),R(1),RTABLE(1),
             2             (TYPE(I,JTYPE(1)+1),I=1,8),
```

NOT REPRODUCIBLE

```
     3              PARCAL(1),PARCAL(2),F(2),RTABLE(2),
     4              (TYPE(I,JTYPE(2)+1),I=1,6)
C
      IF(IREG.EQ.2) STOP 3
C
C
      WRITE(6,120)
C
      I=0
C
      X=RBASE(1)
      DO 20 LAT=1,INCRX
C
      Y=RBASE(2)
      DO 10 LON=1,INCRY
C
      I=I+1
C
      RECEPT(1,I)=X
      RECEPT(2,I)=Y
C
      Y=Y+DELTA
C
   10 CONTINUE
C
      X=X+DELTA
C
   20 CONTINUE
C
C
      NRECEP=INCRX*INCRY+IADD
C
      IF(IADD.EQ.0) GO TO 40
C
      II=I+1
      J=0
C
      DO 30 I=II,NRECEP
C
      J=J+1
C
      RECEPT(1,I)=XRECEP(1,J)
      RECEPT(2,I)=XRECEP(2,J)
C
   30 CONTINUE
C
   40 CONTINUE
C
C
      NREC=NRECEP
C
      NSOR=NSORCE
```

NOT REPRODUCIBLE

```
C
0041        WRITE(12) NREC,NSOR,DATE,BACKGR,AC,BC
C
C
0042        CALL POLUT (N,DUMMY1,DUMMY2,DUMMY3,DUMMY4,DUMMY5)
C
C
0043        REWIND 12
C
C
0044        LINE=0
C
0045        DO 50 I=1,NRECEP
C
0046        IF(LINE.EQ.0) WRITE(6,210) REGION,DATE
C
0047        LINE=LINE+1
C
0048        WRITE(6,220) I,RECEPT(1,I),RECEPT(2,I),CPOLUT(1,I),CPOLUT(2,I)
C
0049        IF(LINE.NE.40.AND.I.NE.NRECEP) GO TO 50
C
0050        LINE=0
C
0051        WRITE(6,230)
C
0052     50 CONTINUE
C
C
0053        IF(IPUNCH.EQ.1) CALL PLOT
C
C
0054        RETURN
C
C
0055    110 FORMAT('1'////////////////19X,'REGION: ',6A4,43X,'DATE: ',5A4
          1       /////////15X,26('____')/14X,'|',104X,'|'/
          2       14X,'|',41X,'REGRESSION PARAMETERS',42X,'|'/
          3       14X,'|',26('____'),'|'/
          4       2(14X,'|'),13X,'|',9X,'|',2X,2(31X,'|')/
          5       14X,'|',2X,'POLLUTANT',3X,'|',1X,'Y-INTERCEPT',1X,'|',2X,
          6       'SLOPE',2X,'|',5X,'REGRESSION COEFFICIENTS',5X,'|',12X,
          7       'COMMENT',12X,'|'/
          8       2(14X,'|'),13X,'|',9X,'|',4X,'COMPUTED',6X,
          9       '5% CONF. LEVEL',1X,'|',31X,'|'/
          A       14X,'|__',2(3('____'),'|_'),2('____'),'|__',
          B       2(7('____'),'___|')/
          C       2(14X,'|'),13X,'|',9X,'|',2(16X,'|'),31X,'|'/
          D       14X,'|',5X,'SO2',6X,'|',F10.2,3X,'|',F8.4,1X,'|',
          E       2(F11.5,5X,'|'),1X,3A4/
          F       2(14X,'|'),13X,'|',9X,'|',2(16X,'|'),31X,'|'/
          G       14X,'| PARTICULATES ','|',F10.2,3X,'|',F8.4,1X,'|',
```

```
     H       2(F11.5,5X,'|'),1X,8A4/
     I       2(14X,'|'),13X,'|',9X,'|',2(16X,'|'),31X,'|'/
     J       '+',14X,26('____'))
C
0056   120 FORMAT(////16X,'IF "NOT STATISTICALLY SIGNIFICANT".....THE COMPU',
     1       'TED SLOPE AND Y-INTERCEPT ARE NOT USED FOR CALIBRATION')
C
C
0057   210 FORMAT('1',36X,'REGION: ',6A4,7X,'DATE: ',5A4///
     1       38X,14('____'),'__'/
     2       37X,'|',58X,'|'/
     3       37X,'|',15X,'RECEPTOR CONCENTRATION DATA',16X,'|'/
     4       37X,'|_',14('____'),'_|'/
     5       37X,'|',10X,'|',19X,'|',27X,'|'/
     6       37X,'| RECEPTOR | RECEPTOR LOCATION | EXPECTED ARITHMETIC',
     7       ' MEAN  |'/
     8       37X,'|  NUMBER  |   (KILOMETERS)    | (MICROGRAMS/CUBIC M',
     9       'ETER)  |'/
     A       37X,'|',10X,'|',2X,'HORIZ',5X,'VERT',3X,'|',5X,'SO2',10X,
     B       'PART',5X,'|'/
     C       37X,'|__',2('____'),'|___',4('____'),'|___',6('____'),'|'/
     D       37X,'|',1X,3(9X,'|'),2(13X,'|'))
C
0058   220 FORMAT(37X,'|',I6,4X,'|',2(F7.1,2X,'|'),2(F9.1,4X,'|'))
C
0059   230 FORMAT(37X,'|',1X,3(9X,'|'),2(13X,'|')/'+',37X,14('____'),'__')
C
C
0060        END
```

NOT REPRODUCIBLE

SUBPROGRAM CAMP

PURPOSE

To control calibration calculations.

CALLING SEQUENCE

CALL CAMP (N, DUMMY 2, DUMMY 3, DUMMY 4).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Correlation Data Tables (PRINTER).

PROCEDURE

1. Call POLUT1 to determine concentration values at measuring sites.
2. Call REG to obtain calibration constants.
3. Print Correlation Data Table.

SUBROUTINES

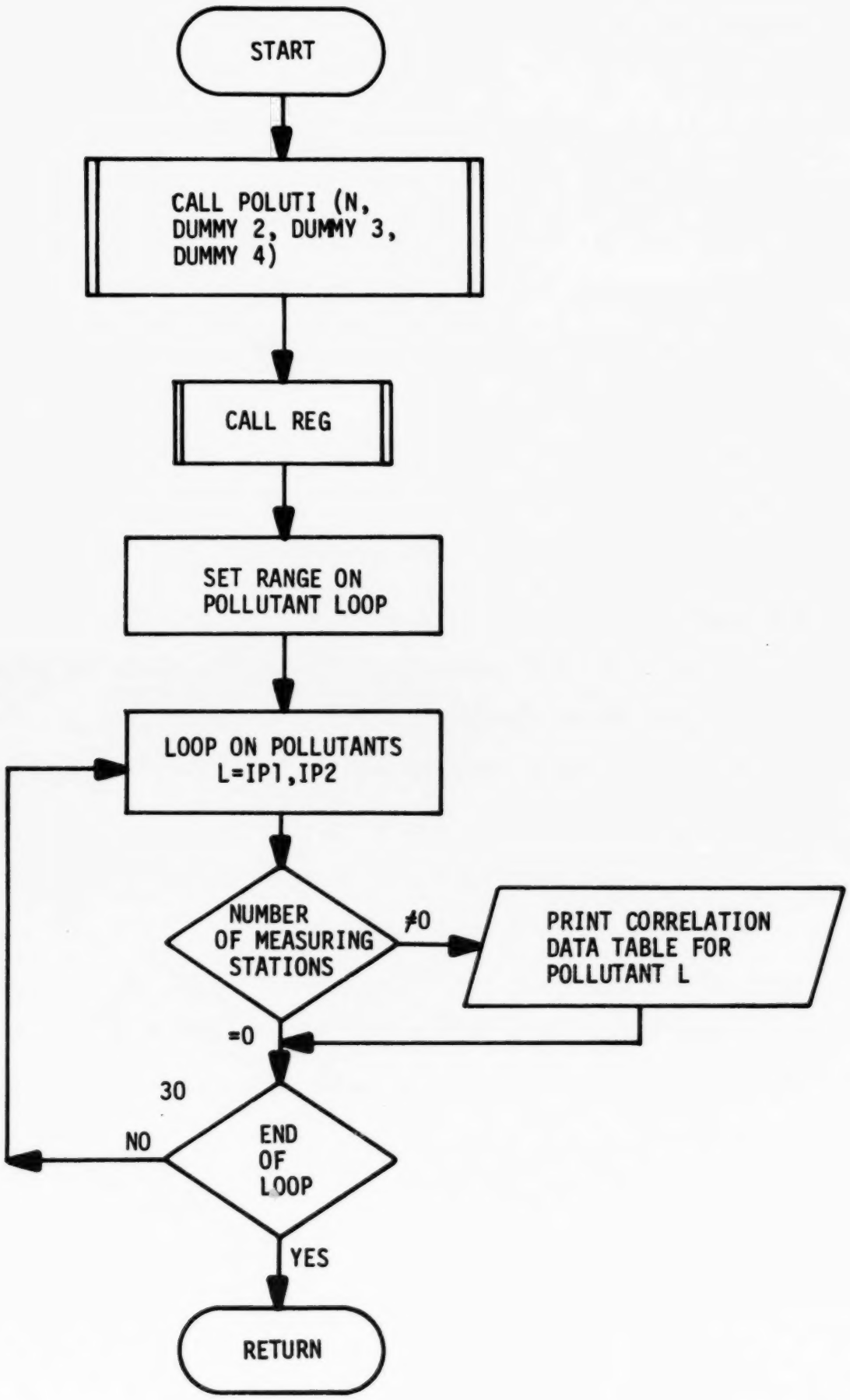
POLUT1 Calculates mean concentration values at measuring stations.

REG Calculates calibration data.

INPUT/OUTPUT VARIABLES

Common blocks INPT, RCPT and RGSN (see BLOCK DATA for definition of variables) and calling sequence variables (see DIM for definition of variables).

SUBROUTINE CAMP (N, DUMMY 2, DUMMY 3, DUMMY 4)



```
0001            SUBROUTINE CAMP (N,DUMMY2,DUMMY3,DUMMY4)
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    CAMP                                             *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*****************************************************************
                C
                C
0002            COMMON /INPT/ REGION(6),DATE(5),DUM21(487),IPOLU1,DUM22(3)
                C
0003            COMMON /RCPT/ DUM31(655),CPOLUT(2,275),DUM32(835)
                C
0004            COMMON /RSGR/ DUM41(5),NN(2),CB(3,100,2),DUM42(9)
                C
                C
                C     NN(2) = NSD2 + NPART
                C
                C     CB(3,100,2) = SD2SB(3,100) + PARCH(3,100)
                C
                C
0005            DIMENSION DUMMY2(N,5),DUMMY3(3,N),DUMMY4(2,N)
                C
0006            INTEGER*2 IPOLU1,DUM22,NN
                C
                C
0007            DIMENSION TITLE(5)
                C
                C
0008            DATA TITLE/'CORR','ELAT','ION ','DATA',' FOR'/
                C
                C
0009            CALL POLUT1 (N,DUMMY2,DUMMY3,DUMMY4)
                C
0010            CALL REG
                C
                C
0011            IP1=IPOLU1/2+1
0012            IP2=2-(IPOLU1+1)/2
0013            DO 30 L=IP1,IP2
                C
0014            LINE=0
                C
0015            M=NN(L)
```

NOT REPRODUCIBLE

```
C
0016            IF(M.EQ.0) GO TO 30
C
0017            DO 20 K=1,M
C
0018            IF(LINE.NE.0) GO TO 10
C
0019            WRITE(6,110) REGION,DATE
C
0020            IF(L.EQ.1) WRITE(6,120) TITLE
0021            IF(L.EQ.2) WRITE(6,130) TITLE
C
0022            WRITE(6,140)
C
0023          10 CONTINUE
C
0024            LINE=LINE+1
C
0025            WRITE(6,150) K,OB(1,K,L),CB(2,K,L),OB(3,K,L),CPOLUT(L,K)
C
0026            IF(LINE.NE.40.AND.K.NE.M) GO TO 20
C
0027            LINE=0
0028            WRITE(6,160)
C
0029          20 CONTINUE
C
0030          30 CONTINUE
C
C
0031            RETURN
C
C
0032          110 FORMAT('1',36X,'REGION: ',6A4,7X,'DATE: ',5A4//
                1       35X,16('____')/
                2       34X,'|',64X,'|')
C
0033          120 FORMAT(34X,'|',20X,5A4,1X,'SO2',20X,'|')
C
0034          130 FORMAT(34X,'|',15X,5A4,1X,'PARTICULATES',16X,'|')
C
0035          140 FORMAT(34X,'|',16('____'),'|'/
                1       34X,'|',12X,'|',19X,'|',31X,'|'/
                2       34X,'| MONITORING | STATION LOCATION  | ARITHMETIC MEAN C',
                3       'ONCENTRATION |'/
                4       34X,'|',3X,'STATION',2X,'|',3X,'(KILOMETERS)',4X,'|',3X,
                5       '(MICROGRAMS/CUBIC METER)',4X,'|'/
                6       34X,'|',3X,'NUMBER',3X,'|',2X,'HORIZ',5X,'VERT',3X,'|',3X,
                7       'OBSERVED *',7X,'COMPUTED',3X,'|'/
                8       34X,'|',3('____'),'|',4('____'),'___','|',7('____'),'___',
                9       '|'/
                A       34X,'|',12X,'|',2(9X,'|'),2(15X,'|'))
C
0036          150 FORMAT(34X,'|',I7,5X,'|',2(F7.1,2X,'|'),2(F10.1,5X,'|'))
C
0037          160 FORMAT(34X,'|',12X,'|',2(9X,'|'),2(15X,'|')/'+',34X,16('____')///
                1       36X,'* OBSERVED = INPUT MEASURED VALUE - INPUT BACKGROUND',
                2       ' VALUE')
C
C
0038            END
```

SUBPROGRAM POLUT1

PURPOSE

To calculate the mean pollutant concentration values at the input measuring sites.

CALLING SEQUENCE

CALL POLUT1 (N, PLUME, SOURCE, SINTEN).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE*

1. Initialize variables.
2. Calculate downwind and crosswind distances and test for non-applicable source-receptor combinations.
3. Test and scale area sources as a function of source-receptor location.
4. Set wind speed and stability dependent variables and calculate plume dispersion and mixing height.
5. Use appropriate diffusion equation to calcualte pollutant concentration fromsource J.
6. Sum all source concentration values at receptor K.

SUBROUTINES

None.

INPUT/OUTPUT VARIABLES

Common blocks INPT, RCPT and RGSN (see BLOCK DATA for definition of variables) and calling sequence variables (see DIM for definition of variables).

*See Flow Chart for POLUT

```
0001          SUBROUTINE POLUT1 (N,PLUME,SOURCE,SINTEN)
        C
        C     ******************************************************************
        C     *                                                                *
        C     *    TITLE:    POLUT1                                            *
        C     *                                                                *
        C     *    AUTHOR:   TRW SYSTEMS GROUP                                 *
        C     *              WASHINGTON OPERATIONS                             *
        C     *              WASHINGTON, D.C.                                  *
        C     *                                                                *
        C     *    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                   *
        C     *                                                                *
        C     *    LANGUAGE USED:  FORTRAN IV - G LEVEL                        *
        C     *                                                                *
        C     ******************************************************************
        C
        C
0002          COMMON /INPT/ DUM21(11),DPTHMX,WNDFRQ(6,16,5),TA,PA,BLIFE(2),
             1              DUM22(2),IPOLU1,DUM23(1),DUM24(1),NSORCE
        C
0003          COMMON /RCPT/ DUM31(655),CPOLUT(2,275),DUM32(835)
        C
0004          COMMON /RGSN/ DUM41(5),NN(2),OB(3,100,2),DUM42(9)
        C
        C
        C     NN(2) = NSO2 + NPART
        C
        C     OB(3,100,2) = SO2OB(3,100) + PAROB(3,100)
        C
        C
0005          DIMENSION PLUME(N,5),SOURCE(3,N),SINTEN(2,N)
        C
0006          INTEGER*2 IPOLU1,DUM23,DUM24,NSORCE,NN
        C
        C
0007          DIMENSION WD(20),COSWD(16),SINWD(16),UU(6),A(7),B(7),C(7)
        C
0008          LOGICAL*1 POINT,SGTDMX
        C
0009          EQUIVALENCE (SINWD(1),WD(1)),(COSWD(1),WD(5))
        C
        C
0010          DATA WD/0.0,0.38268,0.70711,0.92388,1.0,0.92388,0.70711,0.38268,
             1        0.0,-0.38268,-0.70711,-0.92388,-1.0,-0.92388,-0.70711,
             2        -0.38268,0.0,0.38268,0.70711,0.92388/
        C
0011          DATA UU/0.67056,2.45872,4.47040,6.92912,9.61136,12.51712/
        C
0012          DATA A/0.001,0.048,0.119,2.61,52.6,0.187,0.135/
        C
0013          DATA B/1.89,1.11,0.915,0.45,0.15,0.755,0.745/
        C
```

```
0014                DATA C/9.6,2.0,0.0,-25.5,-126.0,-1.4,-1.1/
                C
0015                DATA PI8/0.3926991/
                C
                C
0016                IP1=IPOLU1/2+1
0017                IP2=2-(IPOLU1+1)/2
0018                DO 6000 L=IP1,IP2
                C
0019                BLIF=BLIFE(L)
0020                M=NN(L)
                C
0021                IF(M.EQ.0) GO TO 6000
                C
0022                DO 5000 K=1,M
                C
0023                XOB=OB(1,K,L)
0024                YOB=OB(2,K,L)
                C
0025                DO 4000 J=1,NSORCE
                C
0026                HS=PLUME(J,1)
0027                VS=PLUME(J,2)
0028                DS=PLUME(J,3)
0029                TS=PLUME(J,4)
0030                EPLUME=PLUME(J,5)
0031                SINT=SINTEN(L,J)
                C
0032                XDIFF=SOURCE(1,J)-XOB
0033                YDIFF=SOURCE(2,J)-YOB
0034                SDIAM=SOURCE(3,J)
0035                SRAD=0.5*SDIAM
                C
0036                POINT=.FALSE.
0037                I1=1
0038                I2=16
                C
0039                IF(SDIAM.GT.0.001) GO TO 10
                C
0040                DIST=SQRT(XDIFF*XDIFF+YDIFF*YDIFF)
0041                IF(DIST.LT.0.01) GO TO 4000
                C
0042                POINT=.TRUE.
0043                I1=IFIX(ATAN2(XDIFF,YDIFF)/PI8)+1
0044                IF(XDIFF.LT.0.0) I1=I1+15
0045                I2=I1+1
                C
0046             10 CONTINUE
                C
0047                DO 3000 II=I1,I2
                C
0048                I=II
```

```
0049              IF(I.EQ.17) I=1
                C
0050              DNWIND=1000.0*(YDIFF*COSWD(I)+XDIFF*SINWD(I))
0051              X=DNWIND
                C
0052              IF(POINT) GO TO 20
                C
0053              X=DNWIND+SDIAM/PI8
                C
0054              IF(SRAD+DNWIND.LT.10.0) GO TO 3000
                C
0055           20 CONTINUE
                C
0056              CXWIND=1000.0*ABS(YDIFF*SINWD(I)-XDIFF*COSWD(I))
0057              Y=X*PI8
                C
0058              IF(Y.LE.CXWIND) GO TO 3000
                C
0059              Q=1.0
                C
0060              IF(POINT) GO TO 40
                C
0061              IF(SRAD.GT.ABS(DNWIND)) GO TO 30
                C
0062              IF(SDIAM.LE.DNWIND*PI8) GO TO 40
                C
0063              C=Y/SDIAM-1.0
0064              DNWIND=SQRT(DNWIND*DNWIND+SRAD*SRAD)
0065              X=2.0*DNWIND
                C
0066              IF(CXWIND-(SRAD+X*PI8)) 40,40,3000
                C
0067           30 CONTINUE
                C
0068              Q=0.5*PI8*(X/SDIAM-2.04)**2
0069              DNWIND=SINWD(3)*(DNWIND+SRAD)
0070              X=2.0*DNWIND
                C
0071              IF(CXWIND.GT.SRAD) GO TO 3000
                C
0072           40 CONTINUE
                C
0073              Q=Q*(1.0-CXWIND/Y)
                C
0074              DO 2000 IWS=1,6
                C
0075              U=UU(IWS)
                C
0076              DO 1000 LOOK=1,6
                C
0077              FREQ=1.0
0078              IF(LOOK.EQ.4) FREQ=0.4
```

```
0079                IF(LOOK.EQ.6) FREQ=0.6
                C
0080                LL=LOOK
0081                IF(LOOK.EQ.6) LL=4
                C
0082                DM=DPTHMX
0083                IF(LOOK.EQ.1) DM=1.5*DM
0084                IF(LOOK.EQ.4) DM=0.5*DM+50.0
0085                IF(LOOK.EQ.5) DM=100.0
                C
0086                Y=100.0*Q*WNDFRQ(IWS,I,LL)*FREQ/U
                C
0087                IF(Y.LT.0.001) GO TO 1000
                C
0088                IF(LOOK.EQ.5) LL=4
                C
0089                PHT=HS
                C
0090                IF(.NOT.POINT) GO TO 60
                C
0091                PLR=EPLUME
0092                CC=0.4
                C
0093                IF(EPLUME.GT.0.001) GO TO 50
                C
0094                IF(TS.LT.0.001) GO TO 60
                C
0095                PLR=VS*DS*(1.5+0.00268*DS*PA*(1.0-TA/TS))
0096                CC=0.1*FLOAT(LL)
                C
0097              50 CONTINUE
                C
0098                PHT=HS+((1.4-CC)*PLR/U)
                C
0099              60 CONTINUE
                C
0100                TEMP=-0.693*DNWIND/U
                C
0101                IF(PHT.GT.DM) GO TO 1000
0102                IF(DNWIND.GE.1000.0) GO TO 70
0103                IF(DNWIND.LT.100.0) DNWIND=100.0
                C
0104                IF(LL.GT.3) LL=LL+2
                C
0105              70 CONTINUE
                C
0106                SIGZ=A(LL)*DNWIND**B(LL)+C(LL)
                C
0107                IF(LL.GT.5) LL=LL-2
                C
0108                ARG1=-0.5*(PHT*PHT)/(SIGZ*SIGZ)
                C
```

```
0109              IF(ABS(ARG1).GT.60.0) GO TO 1000
                C
0110              SGTDMX=.TRUE.
0111              XD=X
0112              DD=0.47*DM
                C
0113              IF(SIGZ.LT.DD) GO TO 100
                C
0114              X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0115              IF(LL.LE.3) GO TO 80
                C
0116              IF(X1.GE.1000.0) GO TO 80
                C
0117              LL=LL+2
0118              X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0119           80 CONTINUE
                C
0120              XTEMP=2.0*X1
                C
0121              IF(X.GE.XTEMP) GO TO 90
                C
0122              XD=XTEMP
0123              SGTDMX=.FALSE.
                C
0124           90 CONTINUE
                C
0125              C2=(0.0255*Y)/(DM*XD)
0126              C3=C2
                C
0127              IF(SGTDMX) GO TO 110
                C
0128              XD=X1
                C
0129              SIGZ=DD
                C
0130          100 CONTINUE
                C
0131              C1=(0.0203*Y*EXP(ARG1))/(SIGZ*XD)
0132              C3=C1
                C
0133              IF(.NOT.SGTDMX) C3=C1+(C2-C1)*(X/X1-1.0)
                C
0134          110 CONTINUE
                C
0135              ALIFE=1.0
                C
0136              IF(BLIF.LT.0.25) GO TO 120
                C
0137              TEMP1=TEMP/(3600.0*BLIF)
                C
```

```
0138              IF(ABS(TEMP1).LT.0.005) GO TO 120
                  C
0139              ALIFE=0.0
                  C
0140              IF(TEMP1.LT.-180.218) GO TO 120
                  C
0141              ALIFE=EXP(TEMP1)
                  C
0142            120 CONTINUE
                  C
0143              CPOLUT(L,K)=CPOLUT(L,K)+C3*ALIFE*SINT
                  C
0144             1000 CONTINUE
                  C
0145             2000 CONTINUE
                  C
0146             3000 CONTINUE
                  C
0147             4000 CONTINUE
                  C
0148             5000 CONTINUE
                  C
0149             6000 CONTINUE
                  C
                  C
0150              RETURN
                  C
0151              END
```

SUBPROGRAM REG

PURPOSE

To calculate regression line and correlation coefficient data.

PROGRAM/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE

1. Calculate regression lines (y_o and slope) and correlation coefficient.
2. Compare correlation coefficient with 5% confidence level value.

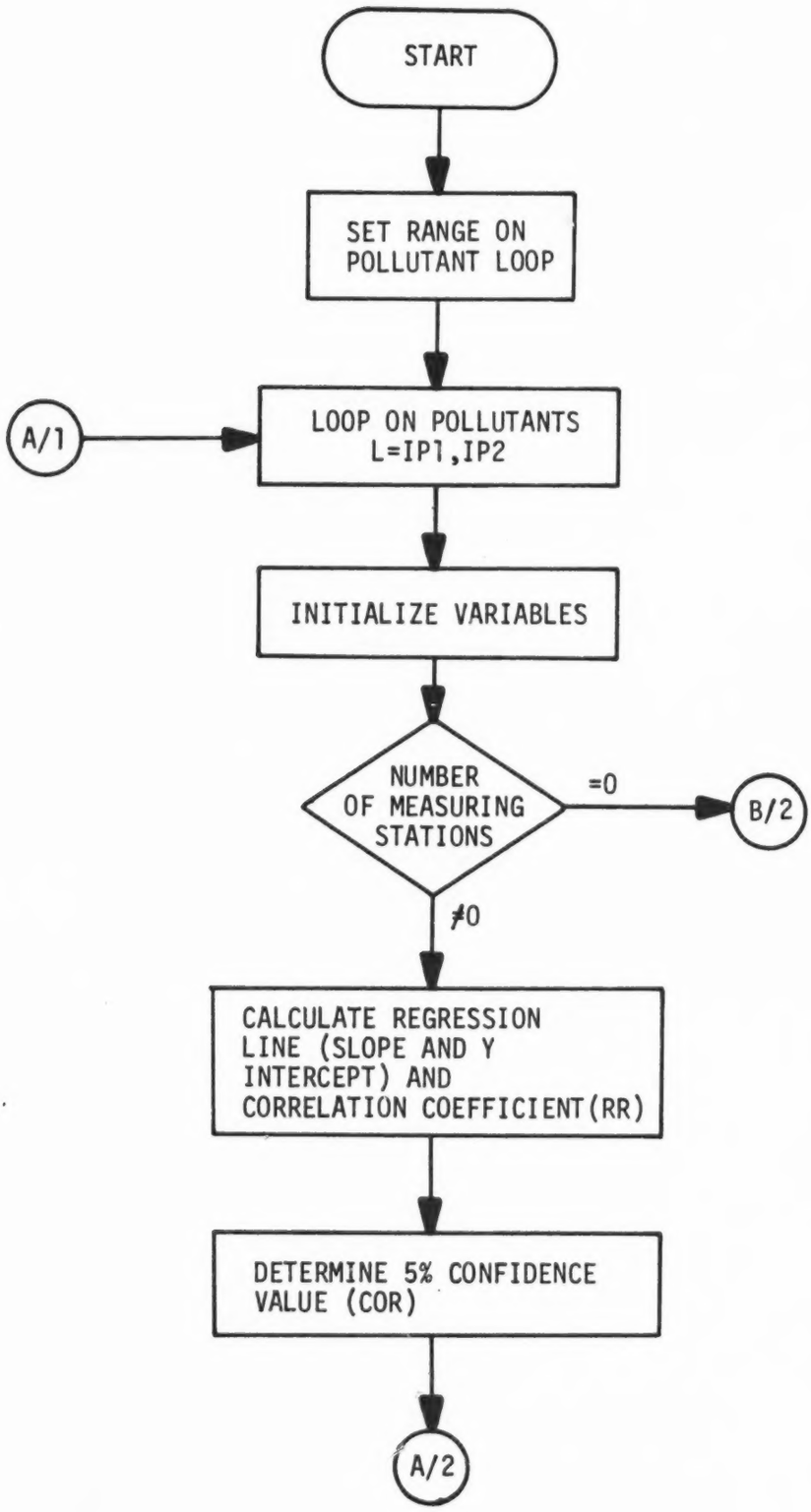
SUBROUTINES

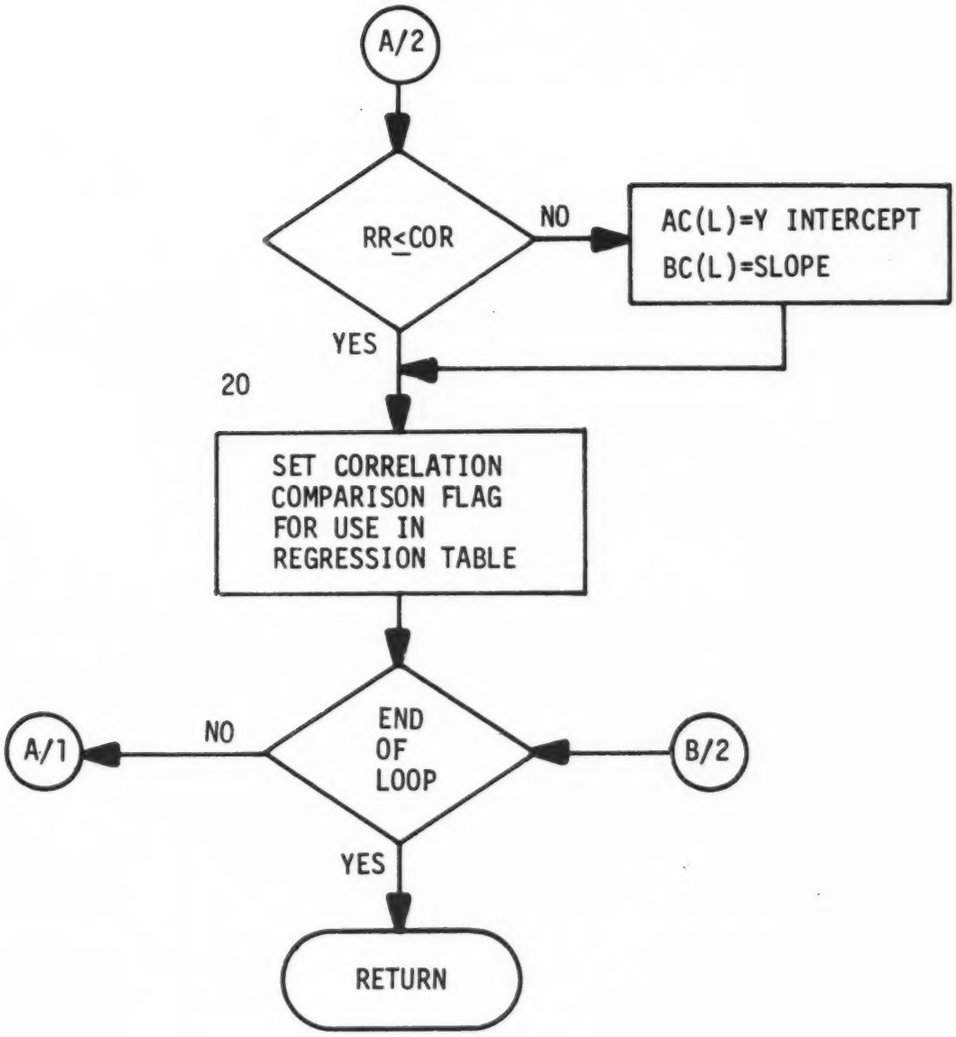
None.

INPUT/OUTPUT VARIABLES

Common blocks INPT, RCPT AND RGSN (See BLOCK DATA for definition of variables).

SUBROUTINE REG




A/2
RR≤COR
NO
AC(L)=Y INTERCEPT
BC(L)=SLOPE
YES
20
SET CORRELATION
COMPARISON FLAG
FOR USE IN
REGRESSION TABLE
A/1
NO
END
OF
LOOP
B/2
YES
RETURN

```
0001            SUBROUTINE REG
                C
                C*****************************************************************
                C*                                                               *
                C*     TITLE:    REG                                             *
                C*                                                               *
                C*     AUTHOR:   TRW SYSTEMS GROUP                               *
                C*               WASHINGTON OPERATIONS                           *
                C*               WASHINGTON, D.C.                                *
                C*                                                               *
                C*     COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                 *
                C*                                                               *
                C*     LANGUAGE USED:  FORTRAN IV - G LEVEL                      *
                C*                                                               *
                C*     ABSTRACT:  THIS ROUTINE COMPUTES THE Y-INTERCEPT, SLOPE,  *
                C*                AND CORRELATION COEFFICIENT OF THE REGRESSION  *
                C*                EQUATION RELATING THE OBSERVED CONCENTRATION   *
                C*                AND THE CALCULATED CONCENTRATION.              *
                C*                                                               *
                C*                    WHERE -- AC      = Y-INTERCEPT            *
                C*                             BC      = SLOPE                  *
                C*                             R       = COMPUTED REGRESSION    *
                C*                                       COEFFICIENT             *
                C*                             RTABLE  = 5% CONFIDENCE LEVEL    *
                C*                                       REGRESSION COEFFICIENT  *
                C*                                                               *
                C*****************************************************************
                C
                C
0002            COMMON /INPT/ DUM21(498),IPOLU1,DUM22(3)
                C
0003            COMMON /RCPT/ DUM31(655),CPOLUT(2,275),DUM32(835)
                C
0004            COMMON /RGSN/ DUM41(1),CAL(2,2),NN(2),OB(3,100,2),AC(2),BC(2),
               1              R(2),RTABLE(2),JTYPE(2)
                C
                C
                C     CAL(2,2) = SO2CAL(2) + PARCAL(2)
                C
                C     NN(2) = NSO2 + NPART
                C
                C     OB(3,100,2) = SO2OB(3,100) + PAROB(3,100)
                C
                C
0005            INTEGER*2 IPOLU1,DUM22,NN,JTYPE
                C
                C
0006            DIMENSION CORREL(100)
                C
                C
0007            DATA CORREL
               1     /0.997,0.950,0.878,0.811,0.754,0.707,0.666,0.632,0.602,0.576,
```

NOT REPRODUCIBLE

```
     2       0.553,0.532,0.514,0.497,0.482,0.468,0.456,0.444,0.433,0.423,
     3       0.413,0.404,0.396,0.388,0.381,0.374,0.367,0.361,0.355,0.349,
     4       0.344,0.339,0.335,0.330,0.325,0.321,0.319,0.312,0.308,0.304,
     5       0.301,0.298,0.294,0.291,0.288,0.285,0.282,0.279,0.276,0.273,
     6       0.271,0.268,0.266,0.264,0.262,0.259,0.257,0.255,0.252,0.250,
     7       0.248,0.246,0.245,0.243,0.241,0.239,0.237,0.236,0.234,0.232,
     8       0.231,0.229,0.228,0.226,0.225,0.223,0.222,0.220,0.219,0.217,
     9       0.216,0.215,0.213,0.212,0.211,0.210,0.209,0.207,0.206,0.205,
     A       0.204,0.203,0.202,0.201,0.200,0.199,0.198,0.197,0.196,0.195/
C
C
0008          IP1=IPOLU1/2+1
0009          IP2=2-(IPOLU1+1)/2
0010          DO 30 L=IP1,IP2
C
0011          SX=0.0
0012          SY=0.0
0013          SX2=0.0
0014          SY2=0.0
0015          SXY=0.0
C
0016          M=NN(L)
C
0017          IF(M.EQ.0) GO TO 30
C
0018          DO 10 K=1,M
C
0019          CP=CPOLUT(L,K)
0020          OP=OB(3,K,L)
C
0021          SX=SX+CP
0022          SY=SY+OP
0023          SX2=SX2+CP*CP
0024          SY2=SY2+OP*OP
0025          SXY=SXY+CP*OP
C
0026       10 CONTINUE
C
0027          AM=FLOAT(M)
C
0028          TSX=SX2-SX*SX/AM
0029          TSY=SY2-SY*SY/AM
0030          TXY=SXY-SX*SY/AM
C
0031          XM=SX/AM
0032          YM=SY/AM
C
0033          BBB=TXY/TSX
0034          AAA=YM-BBB*XM
C
0035          CAL(1,L)=AAA
0036          CAL(2,L)=BBB
```

```
                C
0037                    RR=TXY/SQRT(TSX*TSY)
0038                    R(L)=RR
                C
0039                    COR=CORREL(M-2)
                C
0040                    RTABLE(L)=COR
                C
0041                    J=1
                C
0042                    IF(RR.LE.COR) GO TO 20
                C
0043                    J=2
                C
0044                    AC(L)=AAA
0045                    BC(L)=BBB
                C
0046                20 CONTINUE
                C
0047                    JTYPE(L)=J
                C
0048                30 CONTINUE
                C
                C
0049                    RETURN
                C
0050                    END
```

SUBROUTINE POLUT

PURPOSE

To calculate the calibrated mean pollutant concentration values at input receptor points.

CALLING SEQUENCE

CALL POLUT (N, JCODE, PLUME, SOURCE, SINTEN, CS).

PROGRAM/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Receptor Records and Source Records to Source Contribution File (TAPE).

PROCEDURE

1. Write receptor record on Source Contribution File.
2. Initialize variables.
3. Calculate downwind and crosswind distances and test for non-applicable source-receptor combinations.
4. Test and scale area sources as a function of source-receptor location.
5. Set wind speed and stability dependent variables and calculate plume dispersion and mixing height.
6. Use appropriate diffusion equation to calculate pollutant concentration from source J.
7. Sum all source and point source concentrations at all receptors.
8. Calibrate receptor concentration values.

9. Write source records or Source Contribution File.

10. Save minimum and maximum receptor concentration values.

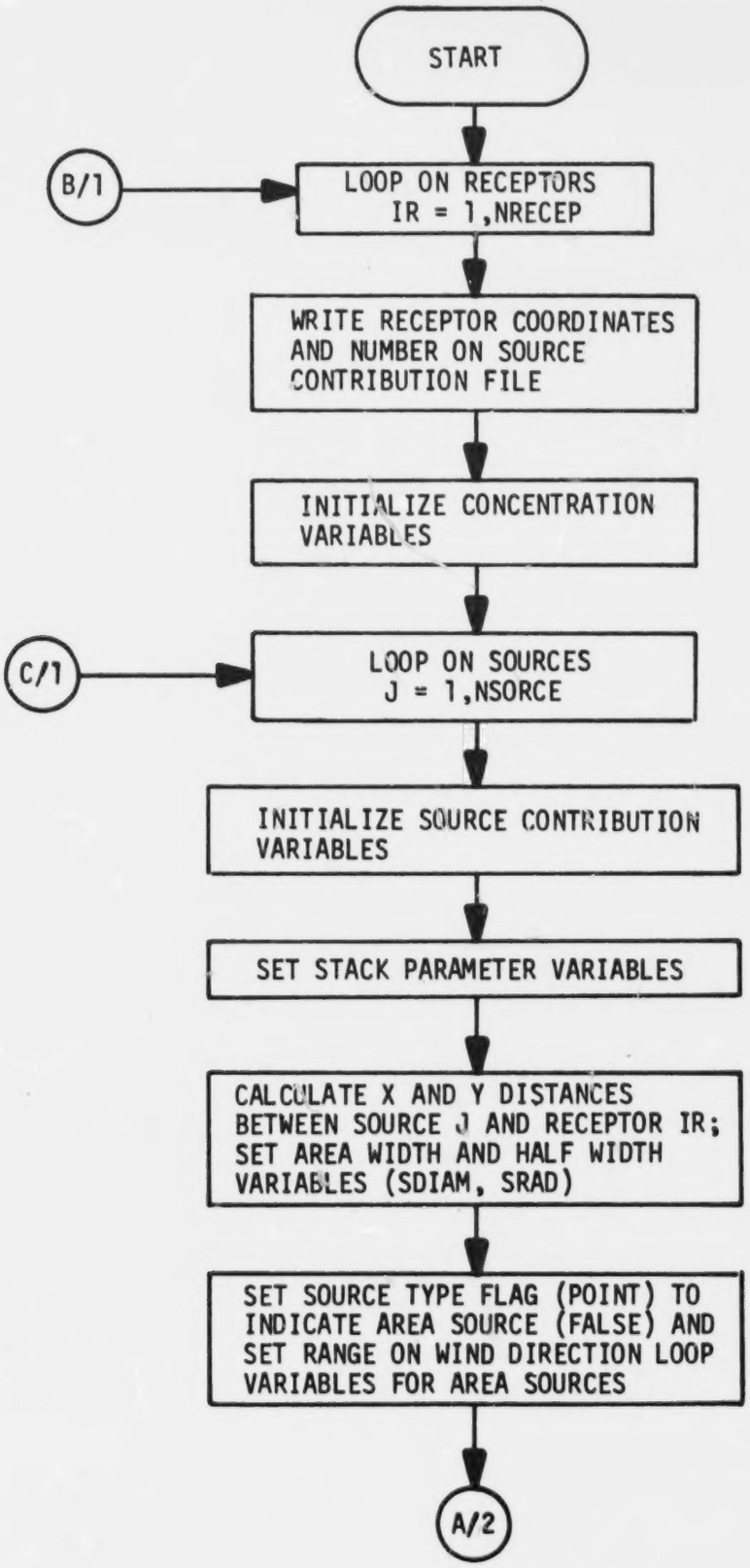
SUBROUTINES

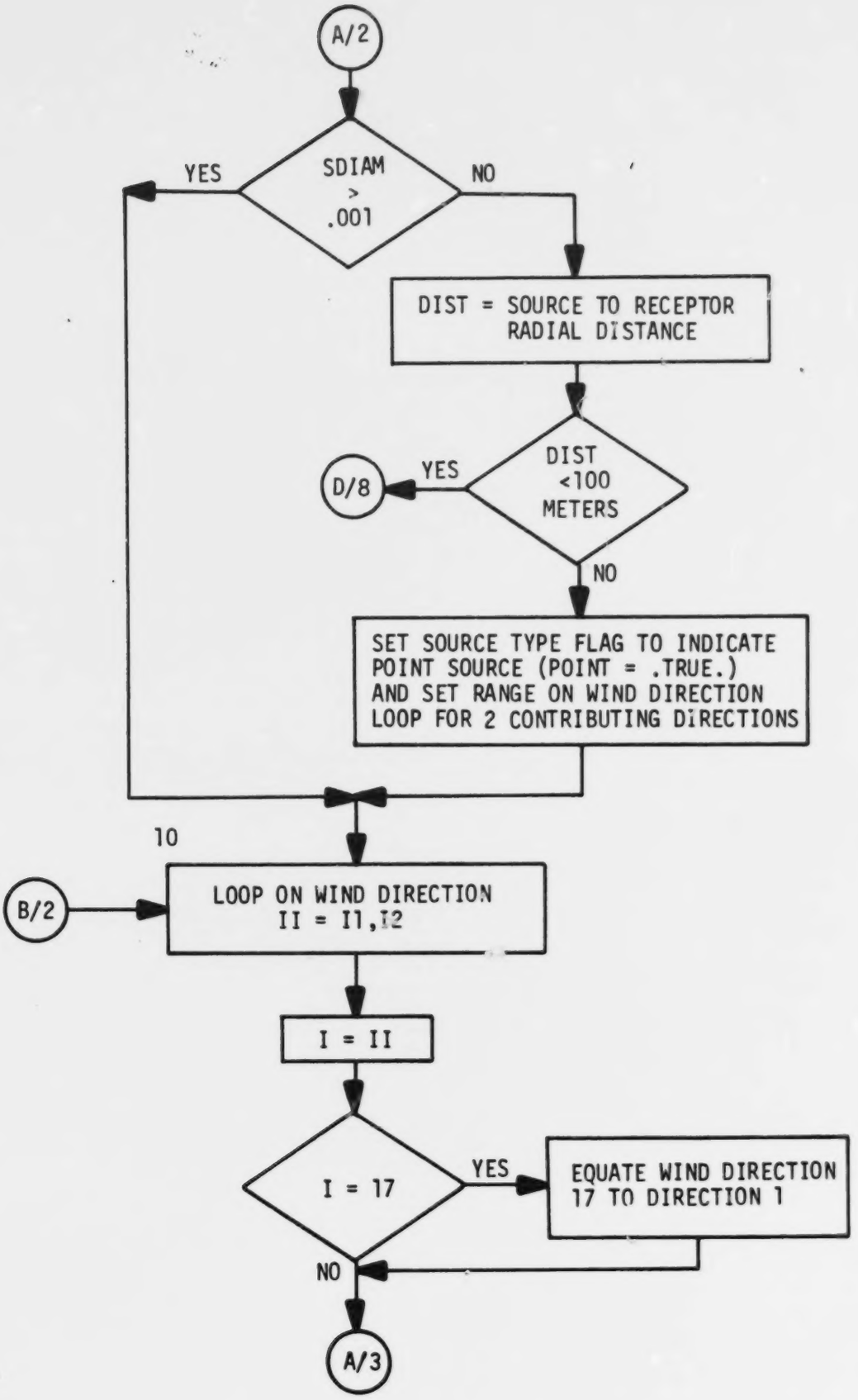
None.

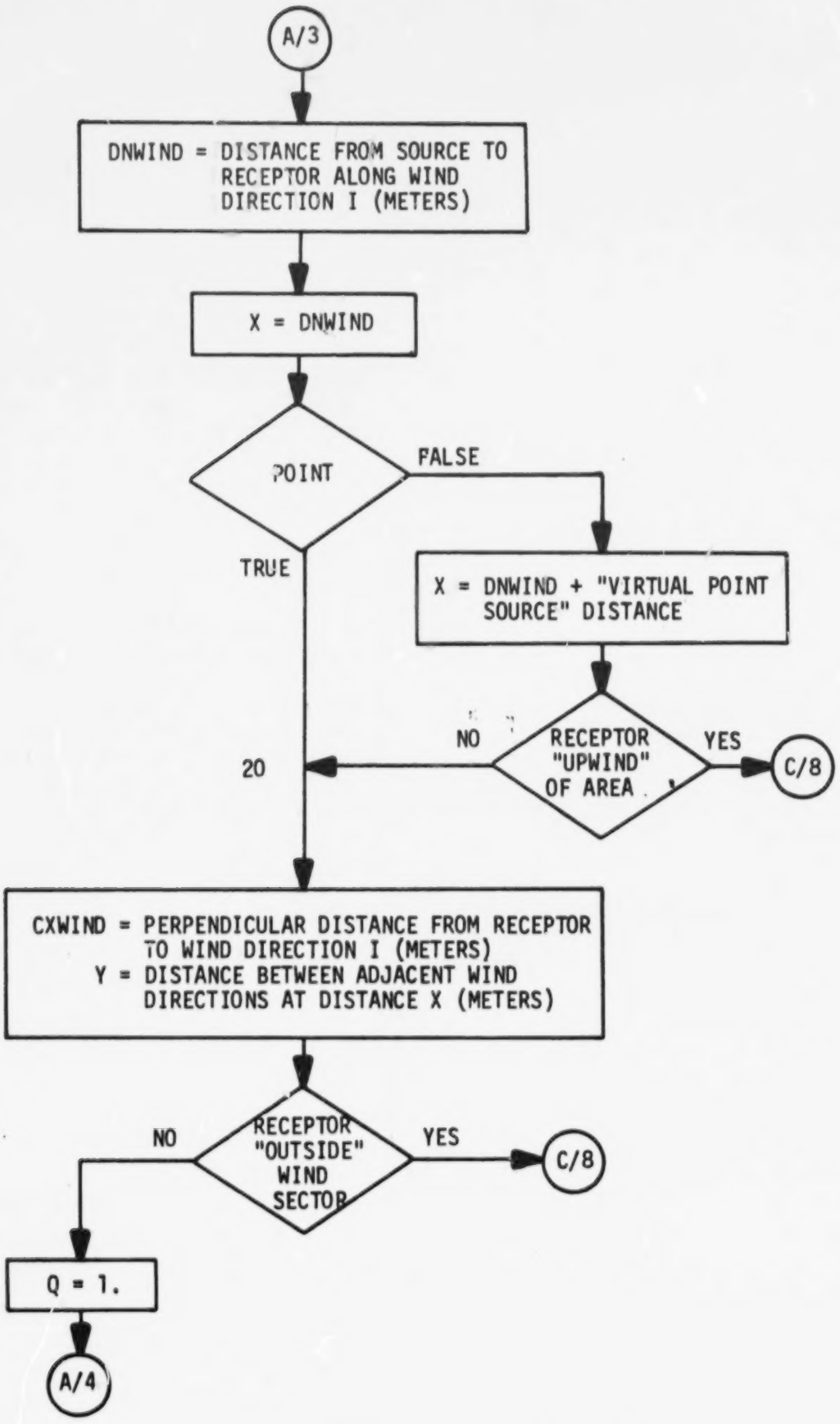
INPUT/OUTPUT VARIABLES

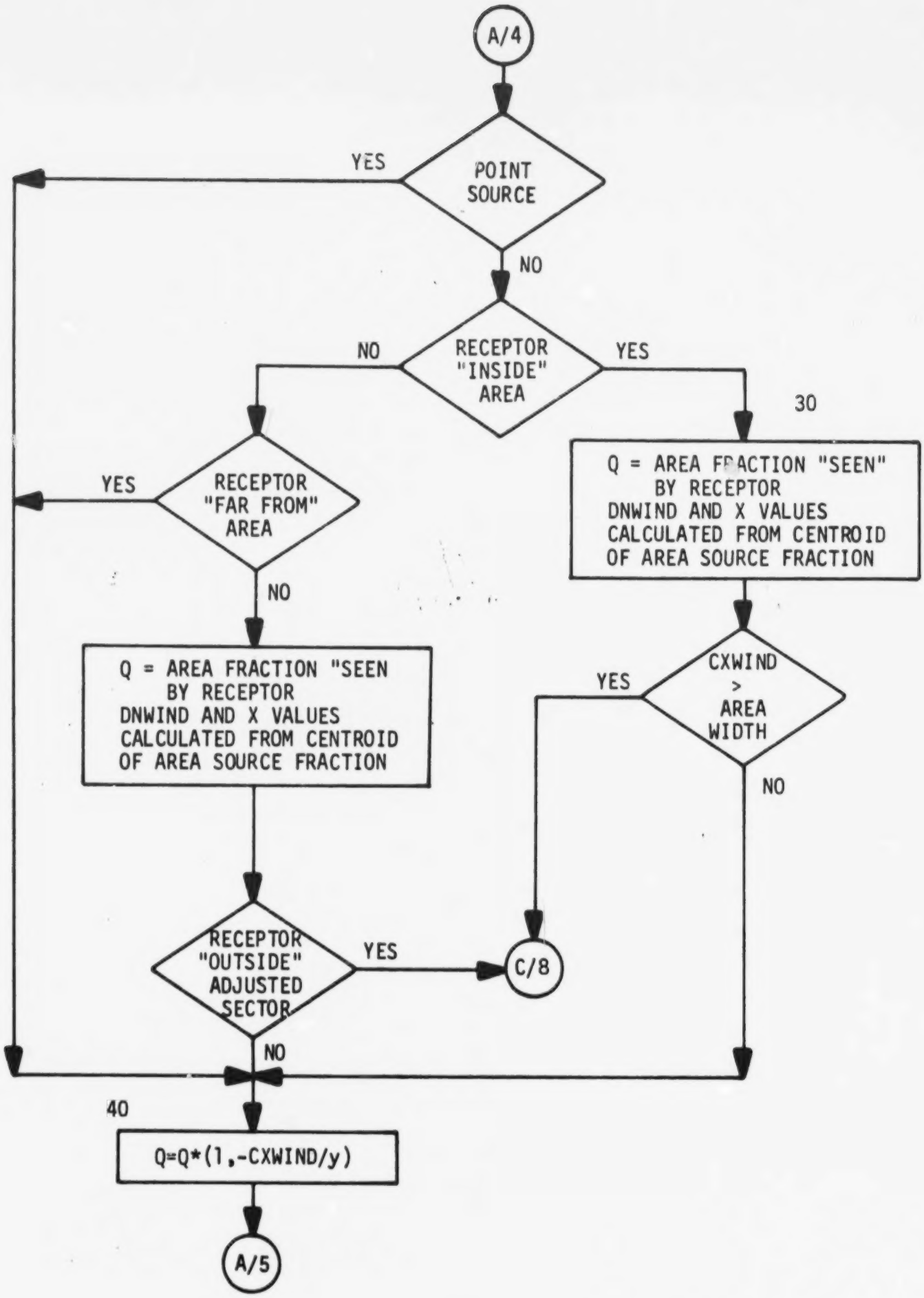
Common blocks INPT, RCPT, RGSN and XTRM (see BLOCK DATA for definition of variables) and calling sequence variables (see DIM for definition of variables).

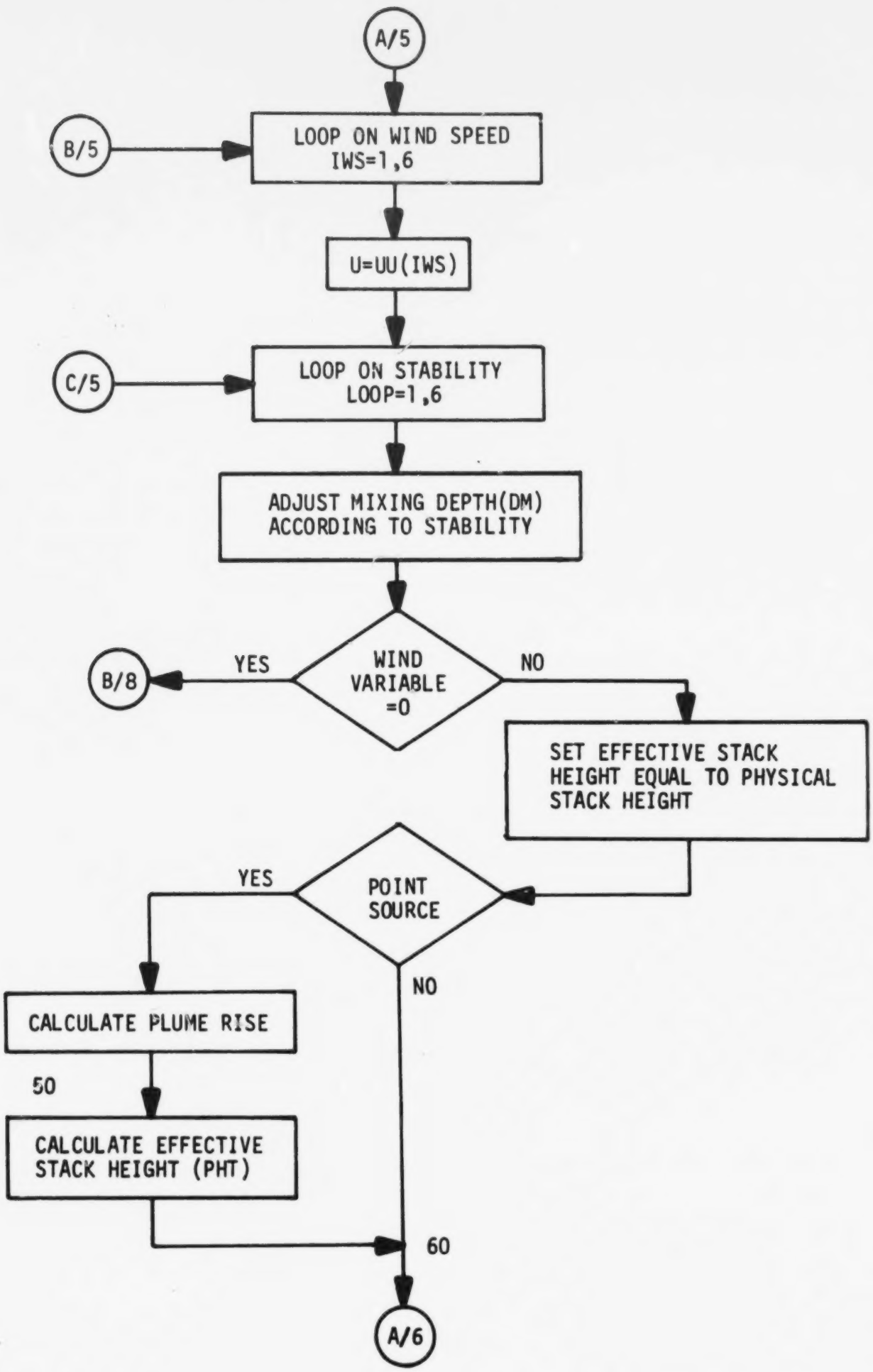
POLUT (N,JCODE,PLUME,SOURCE,SINTEN,CS)

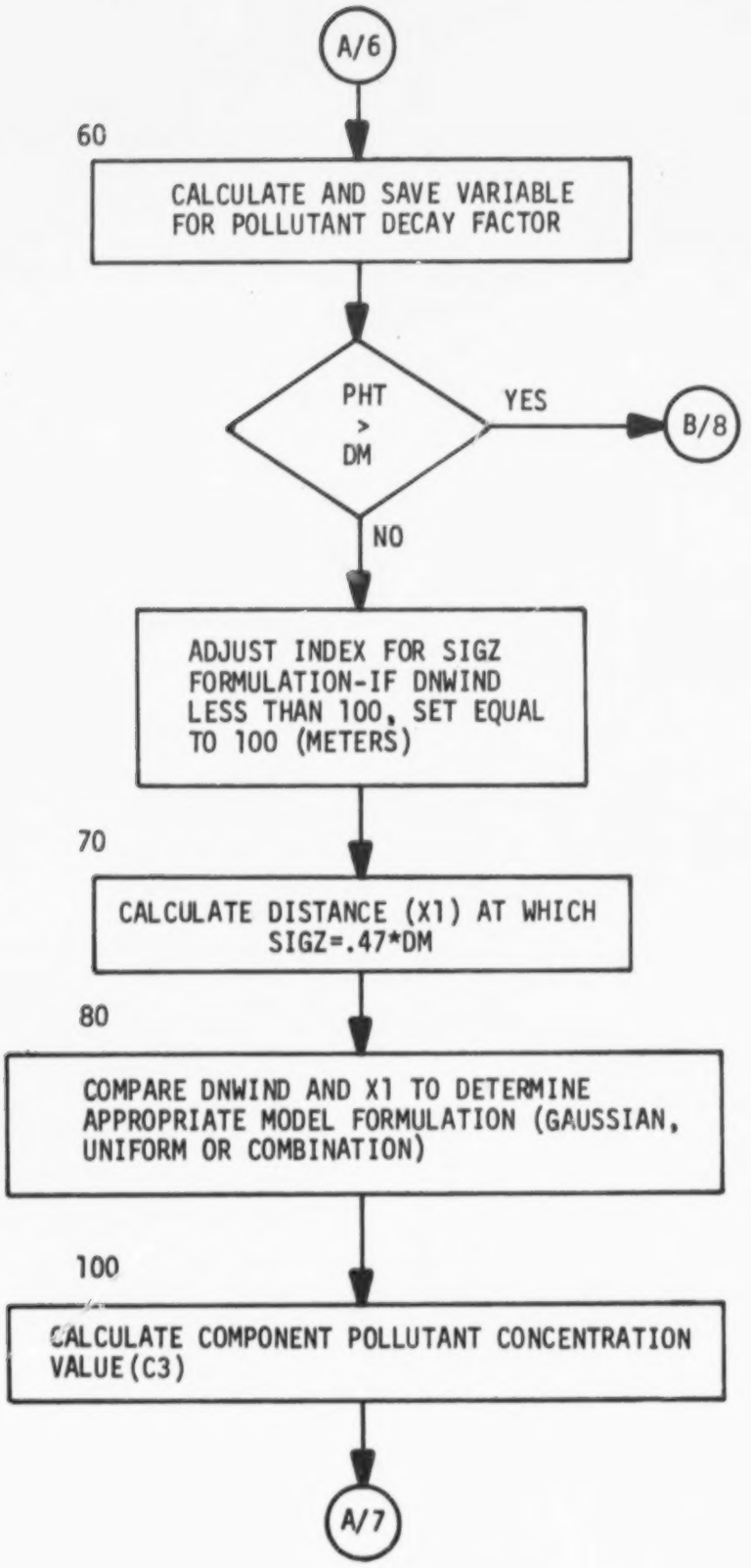


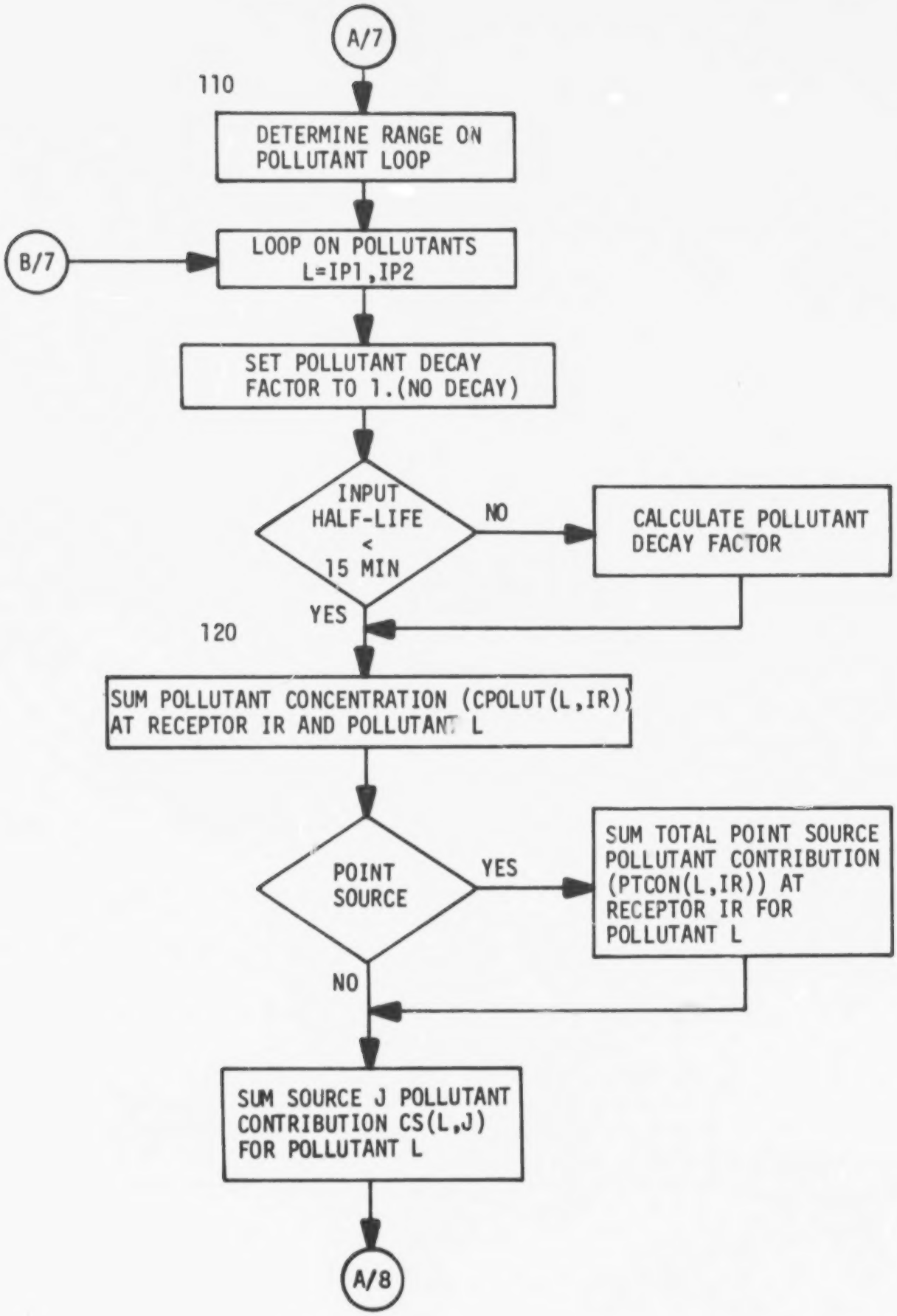

A/2
SDIAM > .001
YES
NO
DIST = SOURCE TO RECEPTOR RADIAL DISTANCE
DIST <100 METERS
YES
D/8
NO
SET SOURCE TYPE FLAG TO INDICATE POINT SOURCE (POINT = .TRUE.) AND SET RANGE ON WIND DIRECTION LOOP FOR 2 CONTRIBUTING DIRECTIONS
10
B/2
LOOP ON WIND DIRECTION II = I1,I2
I = II
I = 17
YES
EQUATE WIND DIRECTION 17 TO DIRECTION 1
NO
A/3

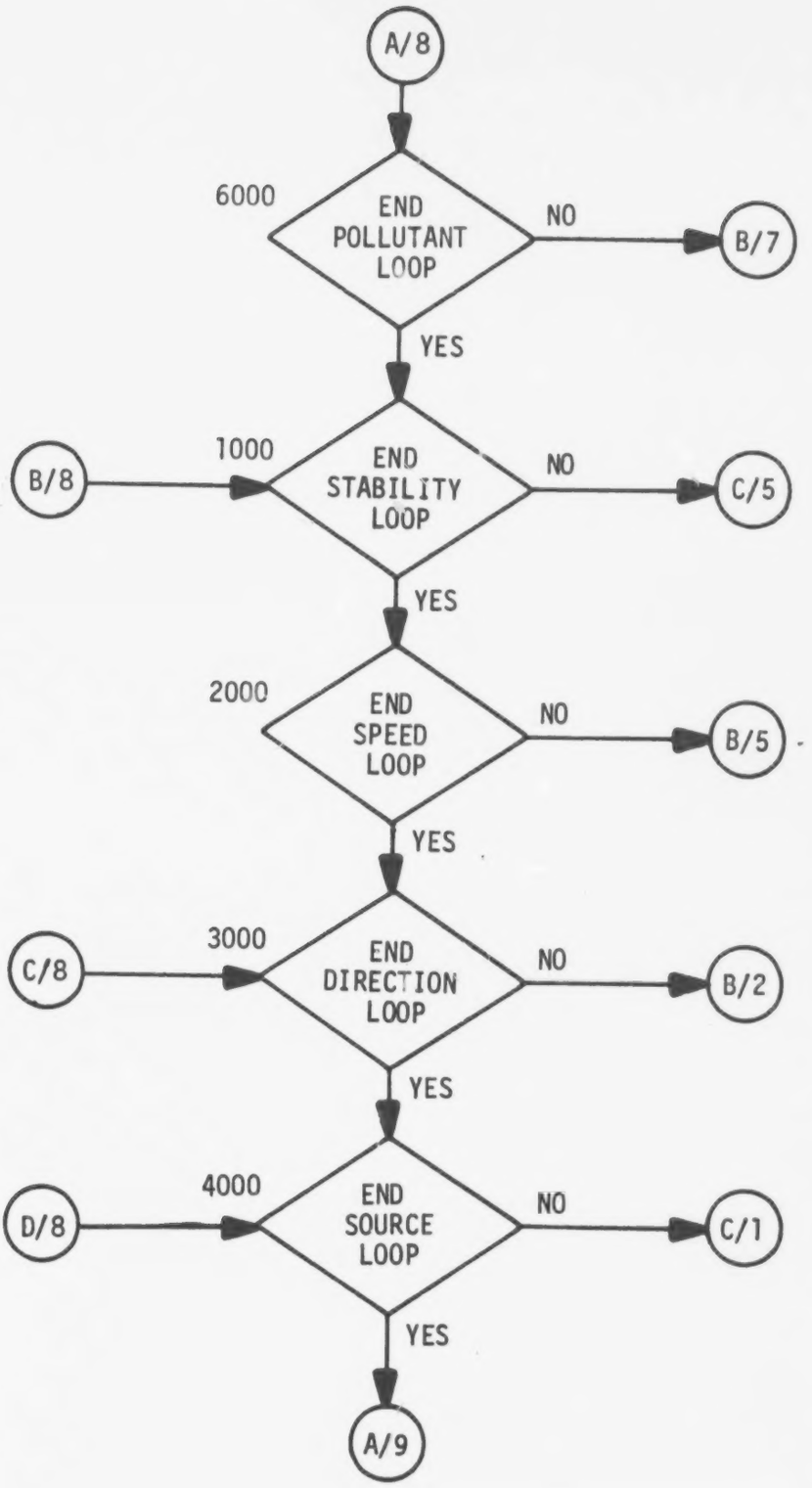

A/3
DNWIND = DISTANCE FROM SOURCE TO RECEPTOR ALONG WIND DIRECTION I (METERS)
X = DNWIND
POINT
FALSE
TRUE
X = DNWIND + "VIRTUAL POINT SOURCE" DISTANCE
NO
RECEPTOR "UPWIND" OF AREA
YES
C/8
20
CXWIND = PERPENDICULAR DISTANCE FROM RECEPTOR TO WIND DIRECTION I (METERS)
Y = DISTANCE BETWEEN ADJACENT WIND DIRECTIONS AT DISTANCE X (METERS)
NO
RECEPTOR "OUTSIDE" WIND SECTOR
YES
C/8
Q = 1.
A/4

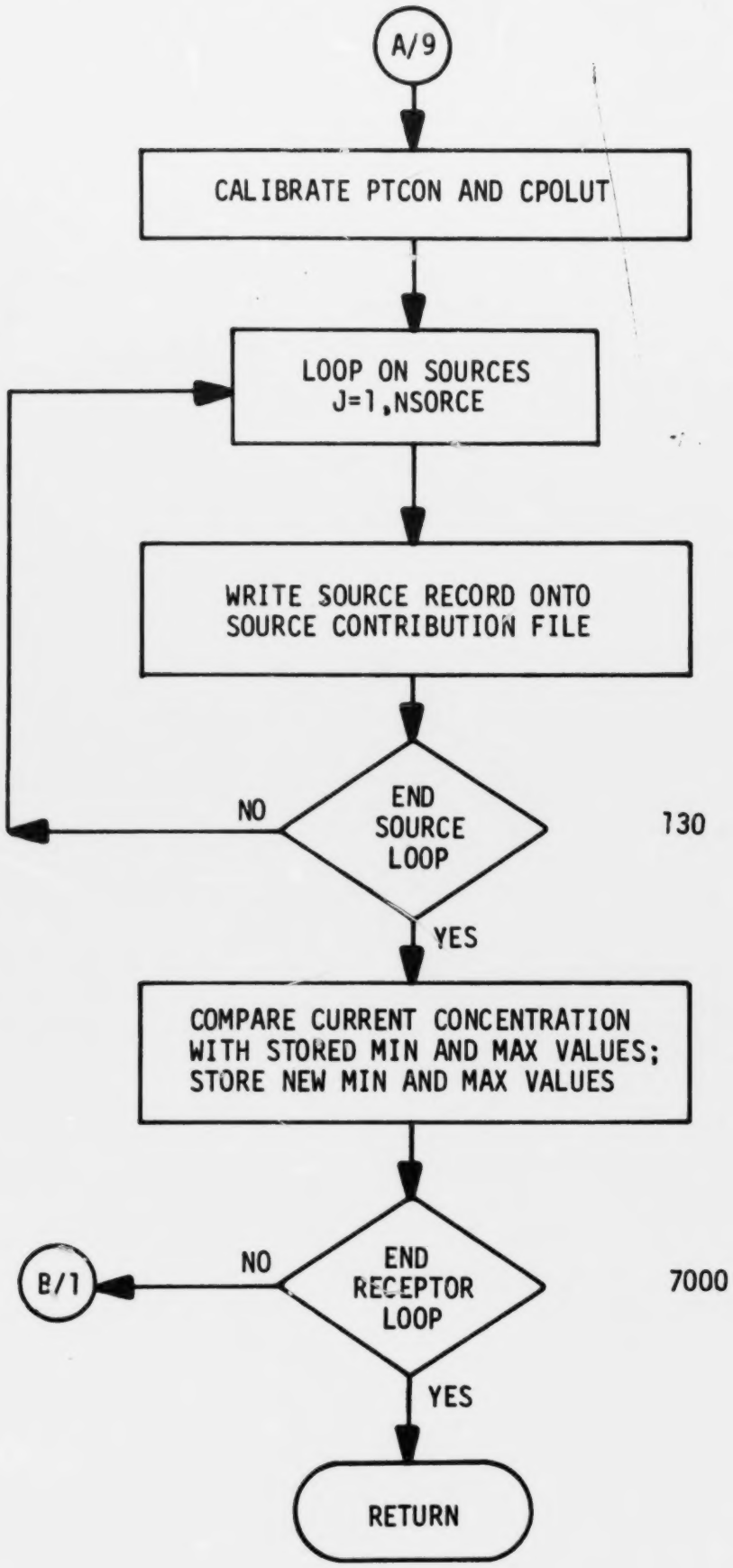

A/4
POINT SOURCE
YES
NO
RECEPTOR "INSIDE" AREA
NO
YES
30
Q = AREA FRACTION "SEEN" BY RECEPTOR DNWIND AND X VALUES CALCULATED FROM CENTROID OF AREA SOURCE FRACTION
CXWIND > AREA WIDTH
YES
NO
RECEPTOR "FAR FROM" AREA
YES
NO
Q = AREA FRACTION "SEEN BY RECEPTOR DNWIND AND X VALUES CALCULATED FROM CENTROID OF AREA SOURCE FRACTION
RECEPTOR "OUTSIDE" ADJUSTED SECTOR
YES
C/8
NO
40
Q=Q*(1,-CXWIND/y)
A/5


A/5
B/5
LOOP ON WIND SPEED
IWS=1,6
U=UU(IWS)
C/5
LOOP ON STABILITY
LOOP=1,6
ADJUST MIXING DEPTH(DM)
ACCORDING TO STABILITY
B/8
YES
WIND
VARIABLE
=0
NO
SET EFFECTIVE STACK
HEIGHT EQUAL TO PHYSICAL
STACK HEIGHT
YES
POINT
SOURCE
NO
CALCULATE PLUME RISE
50
CALCULATE EFFECTIVE
STACK HEIGHT (PHT)
60
A/6


A/6
60
CALCULATE AND SAVE VARIABLE FOR POLLUTANT DECAY FACTOR
PHT > DM
YES
B/8
NO
ADJUST INDEX FOR SIGZ FORMULATION-IF DNWIND LESS THAN 100, SET EQUAL TO 100 (METERS)
70
CALCULATE DISTANCE (X1) AT WHICH SIGZ=.47*DM
80
COMPARE DNWIND AND X1 TO DETERMINE APPROPRIATE MODEL FORMULATION (GAUSSIAN, UNIFORM OR COMBINATION)
100
CALCULATE COMPONENT POLLUTANT CONCENTRATION VALUE(C3)
A/7


A/7
110
DETERMINE RANGE ON POLLUTANT LOOP
B/7
LOOP ON POLLUTANTS L=IP1,IP2
SET POLLUTANT DECAY FACTOR TO 1.(NO DECAY)
INPUT HALF-LIFE < 15 MIN
NO
CALCULATE POLLUTANT DECAY FACTOR
YES
120
SUM POLLUTANT CONCENTRATION (CPOLUT(L,IR)) AT RECEPTOR IR AND POLLUTANT L
POINT SOURCE
YES
SUM TOTAL POINT SOURCE POLLUTANT CONTRIBUTION (PTCON(L,IR)) AT RECEPTOR IR FOR POLLUTANT L
NO
SUM SOURCE J POLLUTANT CONTRIBUTION CS(L,J) FOR POLLUTANT L
A/8


A/8
6000
END POLLUTANT LOOP
NO
B/7
YES
B/8
1000
END STABILITY LOOP
NO
C/5
YES
2000
END SPEED LOOP
NO
B/5
YES
C/8
3000
END DIRECTION LOOP
NO
B/2
YES
D/8
4000
END SOURCE LOOP
NO
C/1
YES
A/9


A/9
CALIBRATE PTCON AND CPOLUT
LOOP ON SOURCES
J=1,NSORCE
WRITE SOURCE RECORD ONTO
SOURCE CONTRIBUTION FILE
NO
END
SOURCE
LOOP
130
YES
COMPARE CURRENT CONCENTRATION
WITH STORED MIN AND MAX VALUES;
STORE NEW MIN AND MAX VALUES
B/1
NO
END
RECEPTOR
LOOP
7000
YES
RETURN

```
0001            SUBROUTINE POLUT (N,JCODE,PLUME,SOURCE,SINTEN,CS)
                C
                C     ****************************************************************
                C     *                                                              *
                C     *    TITLE:    POLUT                                         *
                C     *                                                              *
                C     *    AUTHOR:   TRW SYSTEMS GROUP                             *
                C     *              WASHINGTON OPERATIONS                           *
                C     *              WASHINGTON, D.C.                                *
                C     *                                                              *
                C     *    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                 *
                C     *                                                              *
                C     *    LANGUAGE USED:  FORTRAN IV - G LEVEL                      *
                C     *                                                              *
                C     ****************************************************************
                C
                C
0002            COMMON /INPT/ DUM21(11),DPTHMX,WNDFRQ(6,16,5),TA,PA,BLIFE(2),
               1              BACKGR(2),IPOLU1,DUM22(1),DUM23(1),NSORCE
                C
0003            COMMON /RCPT/ NRECEP,DUM31(3),DUM32(103),RECEPT(2,275),
               1              CPOLUT(2,275),PTCON(2,275),DUM33(285)
                C
0004            COMMON /RGSN/ DUM41(606),AC(2),BC(2),DUM42(5)
                C
0005            COMMON /XTRM/ ZMIN(2),ZMAX(2),DUM61(1)
                C
0006            DIMENSION JCODE(N,4),PLUME(N,5),SOURCE(3,N),SINTEN(2,N),CS(2,N)
                C
0007            INTEGER*2 JCODE,IPOLU1,DUM22,DUM23,NSORCE,NRECEP,DUM31
                C
                C
0008            DIMENSION WD(20),COSWD(16),SINWD(16),UU(6),A(7),B(7),C(7)
                C
0009            LOGICAL*1 POINT,SGTDMX
                C
0010            EQUIVALENCE (SINWD(1),WD(1)),(COSWD(1),WD(5))
                C
                C
0011            DATA WD/0.0,0.38268,0.70711,0.92388,1.0,0.92388,0.70711,0.38268,
               1        0.0,-0.38268,-0.70711,-0.92388,-1.0,-0.92388,-0.70711,
               2        -0.38268,0.0,0.38268,0.70711,0.92388/
                C
0012            DATA UU/0.67056,2.45872,4.47040,6.92912,9.61136,12.51712/
                C
0013            DATA A/0.001,0.048,0.119,2.61,52.6,0.187,0.135/
                C
0014            DATA B/1.89,1.11,0.915,0.45,0.15,0.755,0.745/
                C
0015            DATA C/9.6,2.0,0.0,-25.5,-126.0,-1.4,-1.1/
                C
0016            DATA PI8/0.3926991/
```

```
C
C
0017            DO 7000 IR=1,NRECEP
C
0018            XOB=RECEPT(1,IR)
0019            YOB=RECEPT(2,IR)
C
0020            WRITE(12) XOB,YOB,IR
C
0021            CPOLUT(1,IR)=0.0
0022            CPOLUT(2,IR)=0.0
0023            PTCON(1,IR)=0.0
0024            PTCON(2,IR)=0.0
C
0025            DO 4000 J=1,NSOURCE
C
0026            CS(1,J)=0.0
0027            CS(2,J)=0.0
C
0028            HS=PLUME(J,1)
0029            VS=PLUME(J,2)
0030            DS=PLUME(J,3)
0031            TS=PLUME(J,4)
0032            EPLUME=PLUME(J,5)
C
0033            XDIFF=SOURCE(1,J)-XOB
0034            YDIFF=SOURCE(2,J)-YOB
0035            SDIAM=SOURCE(3,J)
0036            SRAD=0.5*SDIAM
C
0037            POINT=.FALSE.
0038            I1=1
0039            I2=16
C
0040            IF(SDIAM.GT.0.001) GO TO 10
C
0041            DIST=SQRT(XDIFF*XDIFF+YDIFF*YDIFF)
0042            IF(DIST.LT.0.01) GO TO 4000
C
0043            POINT=.TRUE.
0044            I1=IFIX(ATAN2(XDIFF,YDIFF)/PI8)+1
0045            IF(XDIFF.LT.0.0) I1=I1+15
0046            I2=I1+1
C
0047         10 CONTINUE
C
0048            DO 3000 II=I1,I2
C
0049            I=II
0050            IF(I.EQ.17) I=1
C
0051            DNWIND=1000.0*(YDIFF*COSWD(I)+XDIFF*SINWD(I))
```

```
0052                X=DNWIND
                C
0053                IF(POINT) GO TO 20
                C
0054                X=DNWIND+SDIAM/PI8
                C
0055                IF(SRAD+DNWIND.LT.10.0) GO TO 3000
                C
0056              20 CONTINUE
                C
0057                CXWIND=1000.0*ABS(YDIFF*SINWD(I)-XDIFF*COSWD(I))
0058                Y=X*PI8
                C
0059                IF(Y.LE.CXWIND) GO TO 3000
                C
0060                Q=1.0
                C
0061                IF(POINT) GO TO 40
                C
0062                IF(SRAD.GT.ABS(DNWIND)) GO TO 30
                C
0063                IF(SDIAM.LE.DNWIND*PI8) GO TO 40
                C
0064                Q=Y/SDIAM-1.0
0065                DNWIND=SQRT(DNWIND*DNWIND+SRAD*SRAD)
0066                X=2.0*DNWIND
                C
0067                IF(CXWIND-(SRAD+X*PI8)) 40,40,3000
                C
0068              30 CONTINUE
                C
0069                Q=0.5*PI8*(X/SDIAM-2.04)**2
0070                DNWIND=SINWD(3)*(DNWIND+SRAD)
0071                X=2.0*DNWIND
                C
0072                IF(CXWIND.GT.SRAD) GO TO 3000
                C
0073              40 CONTINUE
                C
0074                Q=Q*(1.0-CXWIND/Y)
                C
0075                DO 2000 IWS=1,6
                C
0076                U=UU(IWS)
                C
0077                DO 1000 LOOK=1,6
                C
0078                FREQ=1.0
0079                IF(LOOK.EQ.4) FREQ=0.4
0080                IF(LOOK.EQ.6) FREQ=0.6
                C
0081                LL=LOOK
```

```
0082                IF(LOOK.EQ.6) LL=4
                C
0083                DM=DPTHMX
0084                IF(LOOK.EQ.1) DM=1.5*DM
0085                IF(LOOK.EQ.4) DM=0.5*DM+50.0
0086                IF(LOOK.EQ.5) DM=100.0
                C
0087                Y=100.0*Q*WNDFRQ(IWS,I,LL)*FREQ/U
                C
0088                IF(Y.LT.0.001) GO TO 1000
                C
0089                IF(LOOK.EQ.5) LL=4
                C
0090                PHT=HS
                C
0091                IF(.NOT.POINT) GO TO 60
                C
0092                PLR=EPLUME
0093                CC=0.4
                C
0094                IF(EPLUME.GT.0.001) GO TO 50
                C
0095                IF(TS.LT.0.001) GO TO 60
                C
0096                PLR=VS*DS*(1.5+0.00268*DS*PA*(1.0-TA/TS))
0097                CC=0.1*FLOAT(LL)
                C
0098             50 CONTINUE
                C
0099                PHT=HS+((1.4-CC)*PLR/U)
                C
0100             60 CONTINUE
                C
0101                TEMP=-0.693*DNWIND/U
                C
0102                IF(PHT.GT.DM) GO TO 1000
0103                IF(DNWIND.GE.1000.0) GO TO 70
0104                IF(DNWIND.LT.100.0) DNWIND=100.0
                C
0105                IF(LL.GT.3) LL=LL+2
                C
0106             70 CONTINUE
                C
0107                SIGZ=A(LL)*DNWIND**B(LL)+C(LL)
                C
0108                IF(LL.GT.5) LL=LL-2
                C
0109                ARG1=-0.5*(PHT*PHT)/(SIGZ*SIGZ)
                C
0110                IF(ABS(ARG1).GT.60.0) GO TO 1000
                C
0111                SGTDMX=.TRUE.
```

```
0112                XD=X
0113                DD=0.47*DM
                C
0114                IF(SIGZ.LT.DD) GO TO 100
                C
0115                X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0116                IF(LL.LE.3) GO TO 80
                C
0117                IF(X1.GE.1000.0) GO TO 80
                C
0118                LL=LL+2
0119                X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0120              80 CONTINUE
                C
0121                XTEMP=2.0*X1
                C
0122                IF(X.GE.XTEMP) GO TO 90
                C
0123                XD=XTEMP
0124                SGTDMX=.FALSE.
                C
0125              90 CONTINUE
                C
0126                C2=(0.0255*Y)/(DM*XD)
0127                C3=C2
                C
0128                IF(SGTDMX) GO TO 110
                C
0129                XD=X1
                C
0130                SIGZ=DD
                C
0131             100 CONTINUE
                C
0132                C1=(0.0203*Y*EXP(ARG1))/(SIGZ*XD)
0133                C3=C1
                C
0134                IF(.NOT.SGTDMX) C3=C1+(C2-C1)*(X/X1-1.0)
                C
0135             110 CONTINUE
                C
0136                IP1=IPOLU1/2+1
0137                IP2=2-(IPOLU1+1)/2
0138                DO 6000 L=IP1,IP2
                C
0139                BLIF=BLIFE(L)
0140                SINT=SINTEN(L,J)
                C
0141                ALIFE=1.0
                C
```

```
0142                IF(BLIF.LT.0.25) GO TO 120
                C
0143                TEMP1=TEMP/(3600.0*BLIF)
                C
0144                IF(ABS(TEMP1).LT.0.005) GO TO 120
                C
0145                ALIFE=0.0
                C
0146                IF(TEMP1.LT.-180.218) GO TO 120
                C
0147                ALIFE=EXP(TEMP1)
                C
0148              120 CONTINUE
                C
0149                SC=C3*ALIFE*SINT
                C
0150                CPOLUT(L,IR)=CPOLUT(L,IR)+SC
0151                IF(POINT) PTCON(L,IR)=PTCON(L,IR)+SC
0152                CS(L,J)=CS(L,J)+SC
                C
0153             6000 CONTINUE
                C
0154             1000 CONTINUE
                C
0155             2000 CONTINUE
                C
0156             3000 CONTINUE
                C
0157             4000 CONTINUE
                C
                C
0158                CP1=CPOLUT(1,IR)
0159                CP2=CPOLUT(2,IR)
                C
0160                PTCON(1,IR)=PTCON(1,IR)*(AC(1)/CP1+BC(1))
0161                PTCON(2,IR)=PTCON(2,IR)*(AC(2)/CP2+BC(2))
                C
0162                CPOLUT(1,IR)=AC(1)+BC(1)*CP1+BACKGR(1)
0163                CPOLUT(2,IR)=AC(2)+BC(2)*CP2+BACKGR(2)
                C
                C
0164                DO 130 J=1,NSORCE
                C
0165                K=10
                C
0166                IF(SOURCE(3,J).LT.0.001) K=100
                C
0167                M=K*JCODE(J,2)+JCODE(J,3)
                C
0168                JSIC=JCODE(J,1)
                C
0169                JPJ=JCODE(J,4)
```

```
C
0170            WRITE(12) JSIC,M,JPJ,CS(1,J),CS(2,J)
C
0171          130 CONTINUE
C
C
0172            CP1=CPOLUT(1,IR)
0173            CP2=CPOLUT(2,IR)
C
0174            IF(ZMIN(1).GT.CP1) ZMIN(1)=CP1
0175            IF(ZMIN(2).GT.CP2) ZMIN(2)=CP2
C
0176            IF(ZMAX(1).LT.CP1) ZMAX(1)=CP1
0177            IF(ZMAX(2).LT.CP2) ZMAX(2)=CP2
C
C
0178          7000 CONTINUE
C
C
0179            RETURN
C
0180            END
```

SUBPROGRAM PLOT

PURPOSE

To provide punched deck of receptor locations and concentration values.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Punched card deck (CARD PUNCH).

PROCEDURE

1. Punch receptor coordinates and pollutant concentration values (scaled by a factor of 10^2).

SUBROUTINES

None.

INPUT/OUTPUT VARIABLES

Common block RCPT (see BLOCK DATA for definition of variables).

```
0001            SUBROUTINE PLOT
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    PLOT                                             *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*    ABSTRACT:  THIS ROUTINE PUNCHES THE LOCATION AND           *
                C*               CONCENTRATION VALUES AT EACH RECEPTOR.          *
                C*                                                               *
                C*****************************************************************
                C
                C
0002             COMMON /RCPT/ NRECEP,DUM31(3),DUM32(103),RECEPT(2,275),
                1              CPOLUT(2,275),DUM33(835)
                C
0003             INTEGER*2 NRECEP,DUM31
                C
                C
0004             DO 10 IR=1,NRECEP
                C
0005             WRITE(7,20) RECEPT(1,IR),RECEPT(2,IR),CPOLUT(1,IR),CPOLUT(2,IR)
                C
0006            10 CONTINUE
                C
                C
0007                WRITE(7,30)
                C
                C
0008                RETURN
                C
                C
0009            20 FORMAT(2P2F8.0,1X,2F6.0)
                C
0010            30 FORMAT('¬¬')
                C
                C
0011                END
```

SUBPROGRAM SELECT

PURPOSE

To control calculations for pollutant concentrations above ambient air quality standard, statistical data output and source contribution data output.

CALLING SEQUENCE

CALL SELECT (N, DUMMY 2, DUMMY 3, DUMMY 4).

PROGRAM/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Pollutant Concentration Above Standard table (PRINTER).

PROCEDURE

1. Call EXCEED to calculate and print data for Pollutant Concentration Above Standard output.
2. If requested, call SEL12 to calculate and print Statistical Data.
3. "Uncalibrate" total concentration values at five output receptors for Source Contribution table output.
4. If first time through write heading for Source Contribrtion data.
5. Call POLUT2 to obtain source contribution data.
6. Calibrate source contribution values and sum individual contributions.
7. If start of new page write heading.
8. Calculate and print percent contribution from background and add to previous sum.

SUBROUTINES

EXCEED Sets array of receptors with concentrations above standard; prints Pollutant Concentrations Above Standard table.

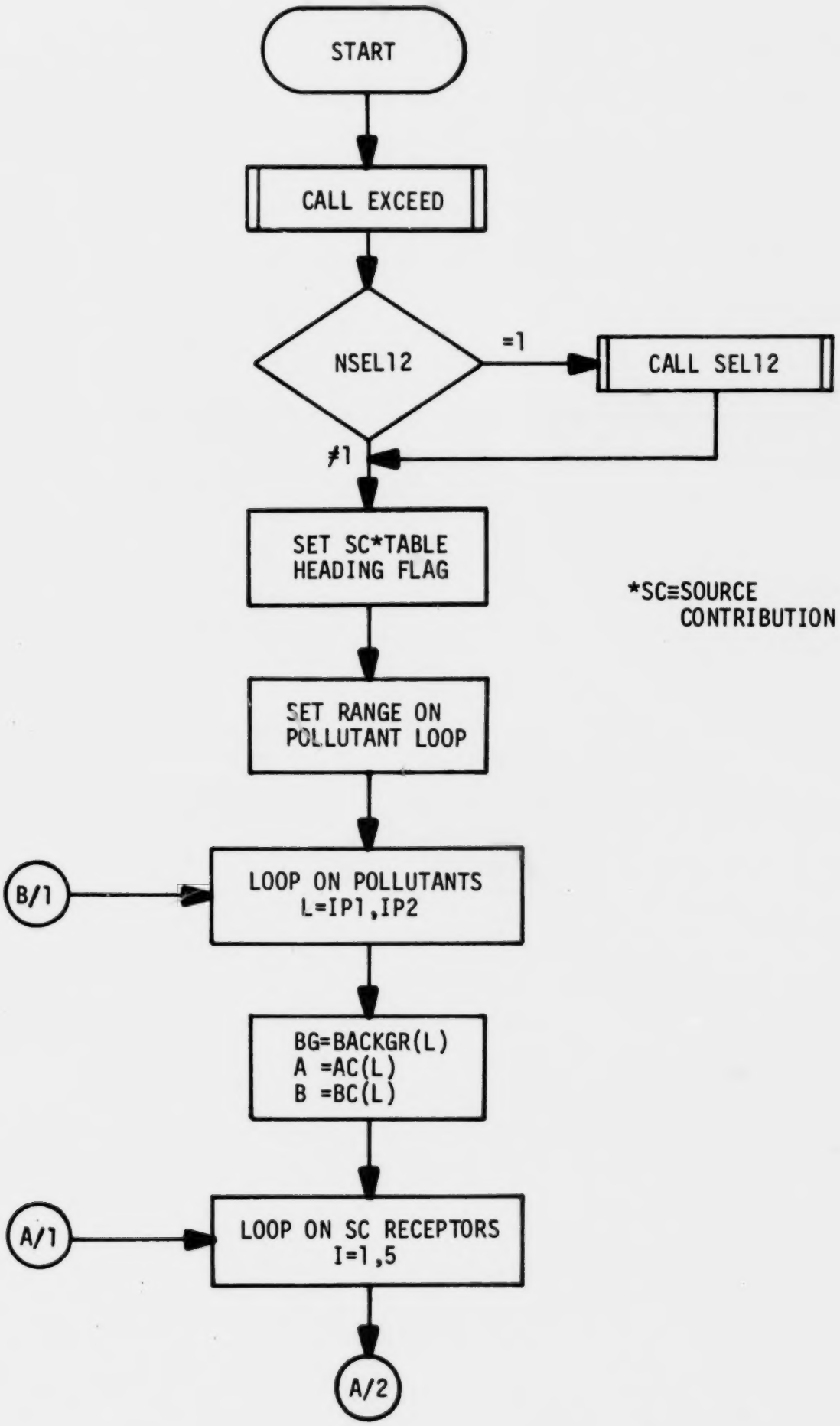
SEL12 Calculates and prints Statistical Data tables.

POLUT2 Calculates Source Contribution Data.

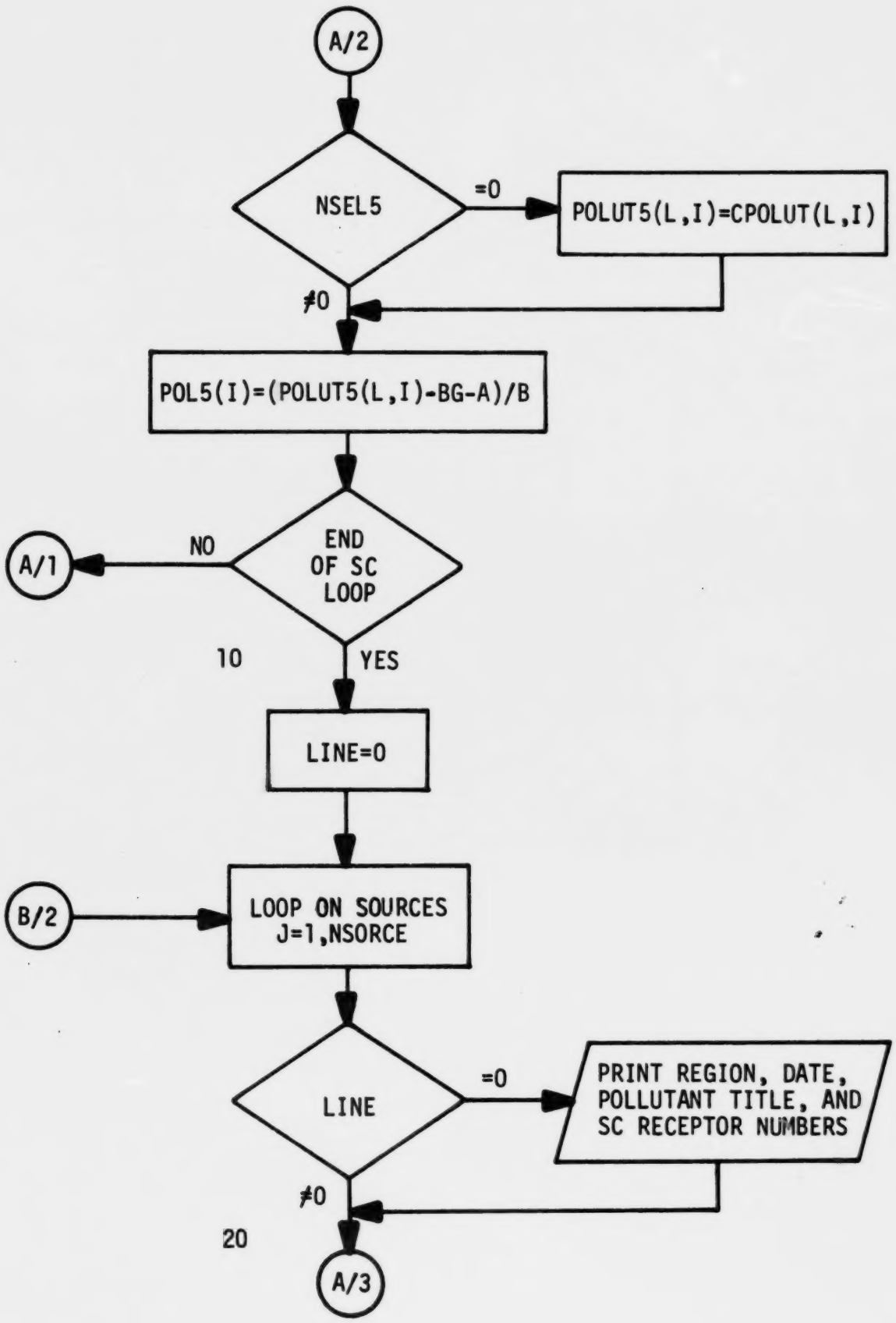
INPUT/OUTPUT VARIABLES

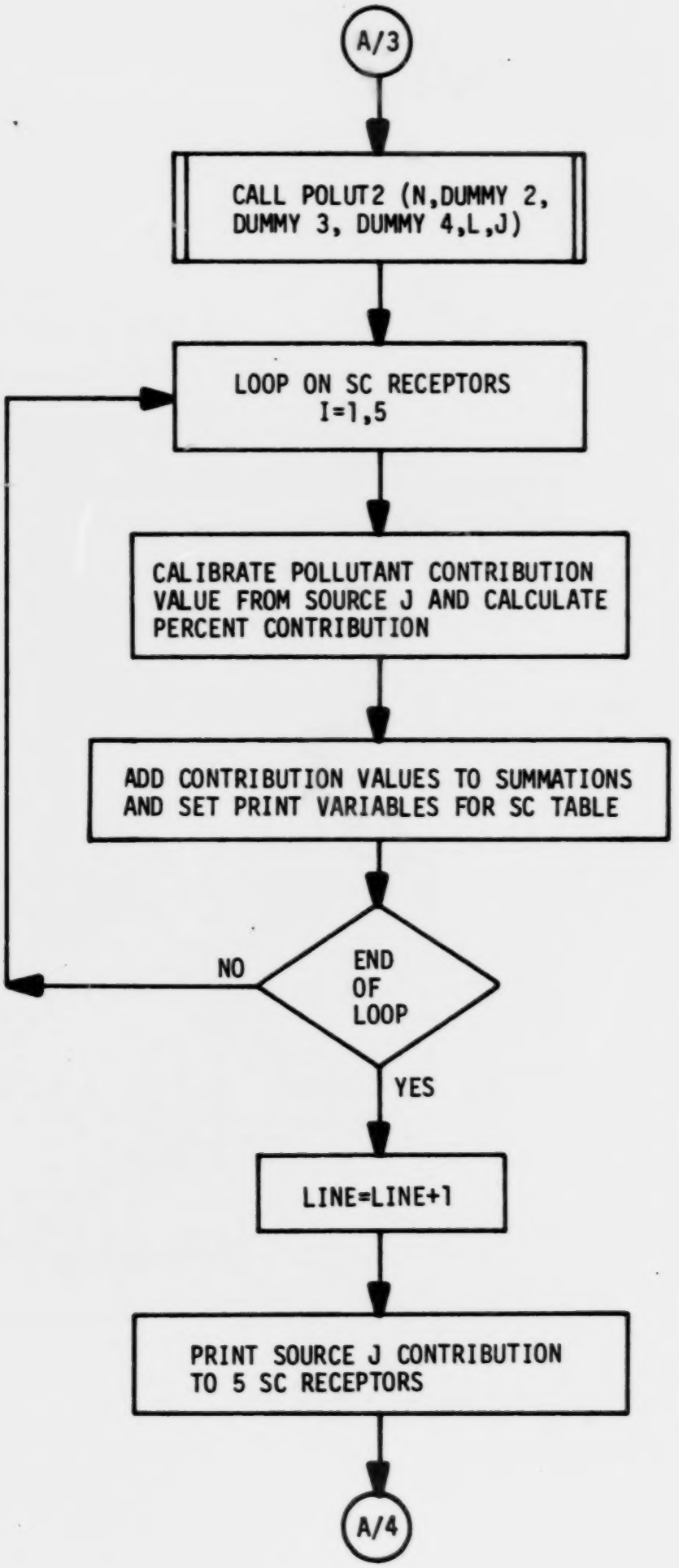
Common blocks INPT, RCPT, RGSN and SLCT (see BLOCK DATA for definition of variables) and calling sequence variables (see DIM for definition of variables).

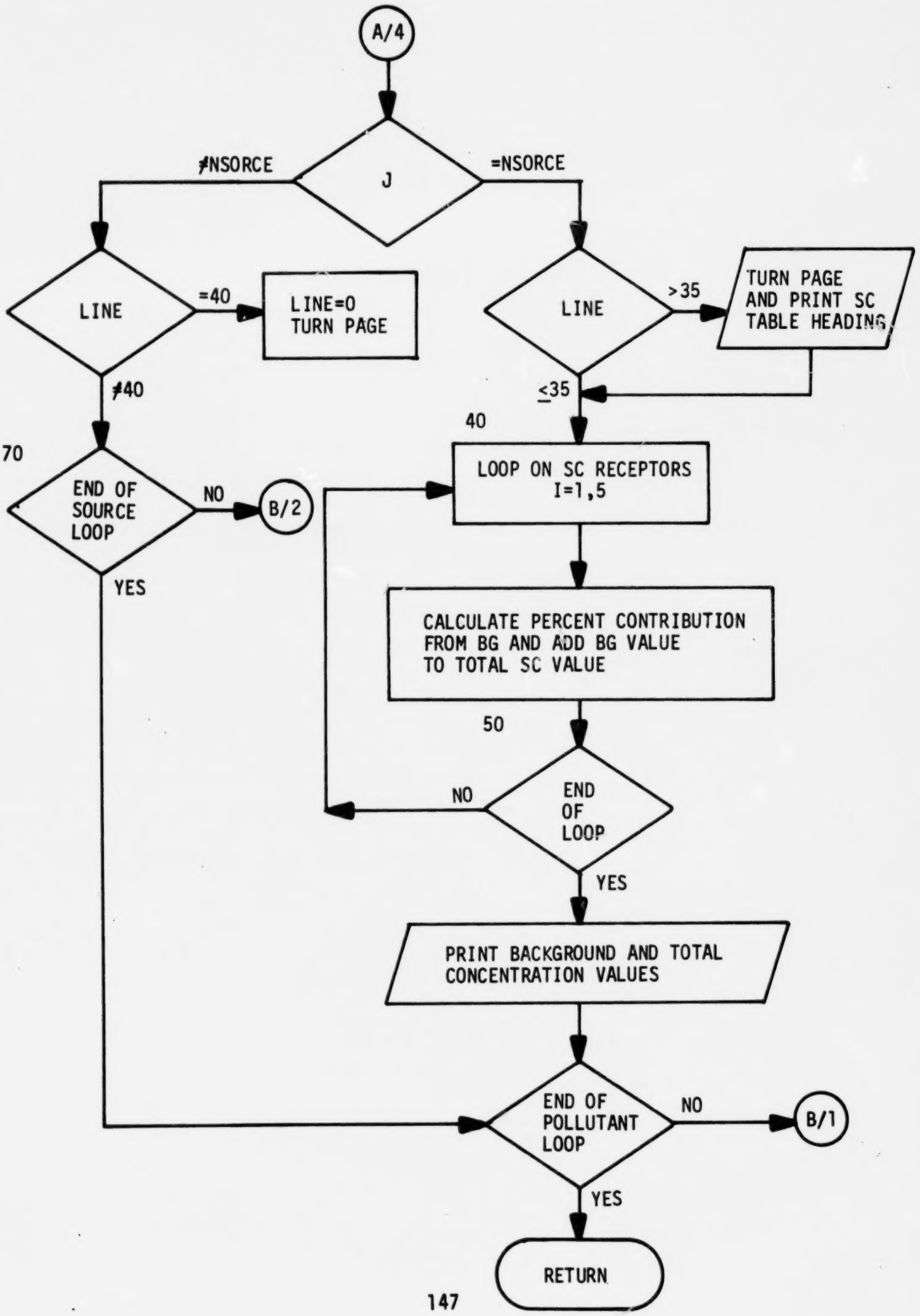
SUBROUTINE SELECT (N,DUMMY 2, DUMMY 3, DUMMY 4)



*SC≡SOURCE CONTRIBUTION


A/2
NSEL5
=0
POLUT5(L,I)=CPOLUT(L,I)
≠0
POL5(I)=(POLUT5(L,I)-BG-A)/B
END OF SC LOOP
NO
A/1
10
YES
LINE=0
B/2
LOOP ON SOURCES J=1,NSORCE
LINE
=0
PRINT REGION, DATE, POLLUTANT TITLE, AND SC RECEPTOR NUMBERS
≠0
20
A/3


A/3
CALL POLUT2 (N,DUMMY 2, DUMMY 3, DUMMY 4,L,J)
LOOP ON SC RECEPTORS I=1,5
CALIBRATE POLLUTANT CONTRIBUTION VALUE FROM SOURCE J AND CALCULATE PERCENT CONTRIBUTION
ADD CONTRIBUTION VALUES TO SUMMATIONS AND SET PRINT VARIABLES FOR SC TABLE
END OF LOOP
NO
YES
LINE=LINE+1
PRINT SOURCE J CONTRIBUTION TO 5 SC RECEPTORS
A/4


A/4
J
≠NSORCE
=NSORCE
LINE
=40
LINE=0
TURN PAGE
≠40
LINE
>35
TURN PAGE
AND PRINT SC
TABLE HEADING
≤35
40
70
LOOP ON SC RECEPTORS
I=1,5
END OF
SOURCE
LOOP
NO
B/2
YES
CALCULATE PERCENT CONTRIBUTION
FROM BG AND ADD BG VALUE
TO TOTAL SC VALUE
50
NO
END
OF
LOOP
YES
PRINT BACKGROUND AND TOTAL
CONCENTRATION VALUES
END OF
POLLUTANT
LOOP
NO
B/1
YES
RETURN

```
0001            SUBROUTINE SELECT (N,DUMMY2,DUMMY3,DUMMY4)
                C
                C***************************************************************
                C*                                                             *
                C*    TITLE:   SELECT                                          *
                C*                                                             *
                C*    AUTHOR:  TRW SYSTEMS GROUP                               *
                C*             WASHINGTON OPERATIONS                           *
                C*             WASHINGTON, D.C.                                *
                C*                                                             *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                *
                C*                                                             *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                     *
                C*                                                             *
                C***************************************************************
                C
                C
0002            COMMON /INPT/ REGION(6),DATE(5),DUM21(485),BACKGR(2),IPOLU1,
               1              DUM22(1),DUM23(1),NSORCE
                C
0003            COMMON /RCPT/ DUM31(655),CPOLUT(2,275),DUM32(825),POLUT5(2,5)
                C
0004            COMMON /RGSN/ DUM41(606),AC(2),BC(2),DUM42(5)
                C
0005            COMMON /SLCT/ NSEL5,NSEL12,ICON(5,2),DUM51(36)
                C
                C
                C     ICON(5,2) = ICONS(5) + ICONP(5)
                C
                C
0006            DIMENSION DUMMY2(N,5),DUMMY3(3,N),DUMMY4(2,N)
                C
0007            DIMENSION POL5(5),SCON(5),SPER(5),SUMSC(5),SUMSP(5),BGPER(5)
                C
0008            DIMENSION PART(3),NAME(2,2),TITLE1(7),TITLE2(10)
                C
                C
0009            INTEGER*2 IPOLU1,DUM22,DUM23,NSORCE,NSEL5,NSEL12,ICON
                C
                C
0010            DATA SO2/' SO2'/,PART/' PAR','TICU','LATE'/,
               1     NAME/'MAXI','MUM ','SELE','CTED'/,
               2     TITLE1/'SOUR','CE C','ONTR','IBUT','IONS',' TO ','FIVE'/,
               3     TITLE2/' REC','EPTO','RS (','MICR','OGRA','MS P','ER C',
               4            'UBIC',' MET','ER) '/
                C
                C
0011            CALL EXCEED
                C
                C
0012            IF(NSEL12.EQ.1) CALL SEL12
                C
```

```
                C
0013                IA=NSEL5+1
                C
0014                IP1=IPOLU1/2+1
0015                IP2=2-(IPOLU1+1)/2
0016                DO 80 L=IP1,IP2
                C
0017                BG=BACKGR(L)
                C
0018                A=AC(L)
0019                B=BC(L)
                C
                C
0020                DO 10 I=1,5
                C
0021                SUMSC(I)=0.0
0022                SUMSP(I)=0.0
                C
0023                IF(NSEL5.EQ.0) POLUT5(L,I)=CPOLUT(L,I)
                C
0024                POL5(I)=(POLUT5(L,I)-BG-A)/B
                C
0025             10 CONTINUE
                C
                C
0026                LINE=0
                C
0027                DO 70 J=1,NSORCE
                C
0028                IF(LINE.NE.0) GO TO 20
                C
0029                WRITE(6,110) REGION,DATE
                C
0030                IF(L.EQ.1) WRITE(6,120) TITLE1,NAME(1,IA),NAME(2,IA),SO2,TITLE2
0031                IF(L.EQ.2) WRITE(6,130) TITLE1,NAME(1,IA),NAME(2,IA),PART,TITLE2
                C
0032                WRITE(6,140) (ICON(I,L),I=1,5)
                C
0033             20 CONTINUE
                C
0034                CALL POLUT2 (N,DUMMY2,DUMMY3,DUMMY4,L,J)
                C
0035                DO 30 I=1,5
                C
0036                SC=CPOLUT(L,I)*(B+A/POL5(I))
0037                SP=100.0*SC/POLUT5(L,I)
0038                SUMSC(I)=SUMSC(I)+SC
0039                SUMSP(I)=SUMSP(I)+SP
0040                SCON(I)=SC
0041                SPER(I)=SP
                C
0042             30 CONTINUE
```

```
C
0043            LINE=LINE+1
C
0044            WRITE(6,150) J,(SCCN(I),SPER(I),I=1,5)
C
0045            IF(J.NE.NSORCE) GO TO 60
C
0046            IF(LINE.LE.35) GO TO 40
C
0047            WRITE(6,170)
C
0048            WRITE(6,110) REGION,DATE
C
0049            IF(L.EQ.1) WRITE(6,120) TITLE1,NAME(1,IA),NAME(2,IA),SO2,TITLE2
0050            IF(L.EQ.2) WRITE(6,130) TITLE1,NAME(1,IA),NAME(2,IA),PART,TITLE2
C
0051            WRITE(6,140) (ICCN(I,L),I=1,5)
C
0052          40 CONTINUE
C
0053            DO 50 I=1,5
C
0054            BGPER(I)=100.0*BG/POLUT5(L,I)
0055            SUMSC(I)=SUMSC(I)+BG
0056            SUMSP(I)=SUMSP(I)+BGPER(I)
C
0057          50 CONTINUE
C
0058            WRITE(6,160) (BG,BGPER(I),I=1,5),(SUMSC(I),SUMSP(I),I=1,5)
C
0059            WRITE(6,170)
C
0060            GO TO 80
C
0061          60 CONTINUE
C
0062            IF(LINE.NE.40) GO TO 70
C
0063            LINE=0
C
0064            WRITE(6,170)
C
0065          70 CONTINUE
C
C
0066          80 CONTINUE
C
C
0067            RETURN
C
C
0068         110 FORMAT('1',18X,'REGION: ',6A4,42X,'DATE: ',5A4////
```

```
     1       15X,25('____'),'___'/
     2       14X,'|',103X,'|')
C
0069      120 FORMAT(14X,'|',11X,7A4,1X,13A4,11X,'|')
C
0070      130 FORMAT(14X,'|',7X,7A4,1X,15A4,7X,'|')
C
0071      140 FORMAT(14X,'|',25('____'),'___|'/
     1       14X,'|',8X,'|',5(18X,'|')/
     2       14X,'| SOURCE |',5(2X,'RECEPTOR #',I4,2X,'|')/
     3       14X,'|',2('____'),'|',5(4('____'),'__|')/
     4       14X,'|',8X,'|',5(18X,'|'))
C
0072      150 FORMAT(14X,'|',I6,2X,'|',5(F8.4,F7.2,'%',2X,'|'))
C
0073      160 FORMAT(14X,'|',8X,'|',5(18X,'|')/
     1       14X,'|  BACK- |',5(18X,'|')/
     2       14X,'| GROUND |',5(F8.4,F7.2,'%',2X,'|')/
     3       14X,'|',8X,'|',5(18X,'|')/
     4       14X,'| TOTAL  |',5(F8.4,F7.2,'%',2X,'|'))
C
0074      170 FORMAT(14X,'|',8X,'|',5(18X,'|')/'+',14X,25('____'),'___')
C
C
0075          END
```

SUBPROGRAM EXCEED

PURPOSE

To determine the set of receptor data used for the Concentration Above Standard and Source Contribution table output.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

None.

OUTPUT

Pollutant Concentration Above Standard table (PRINTER).

PROCEDURE

1. If Source Contribution receptors are input, set to output receptor variables.
2. If Statistical Data is requested, save desired receptor concentration values.
3. Fill array with all receptors with concentration values above standard. If less than five receptors in completed array, cut standard in half and try again. Save receptor count for first pass (this is the number to be output in the Pollutant Concentrations Above Standard table; at least five ordered receptors must be obtained for Source Contribution table with five maximum receptor option).
4. Call order to sort receptor array in descending order of concentration value.
5. Set receptor variables for Source Contribution table.
6. Print Pollutant Concentration Above Standard table heading.

7. Calculate output variables and print Pollutant Concentrations Above Standard table.

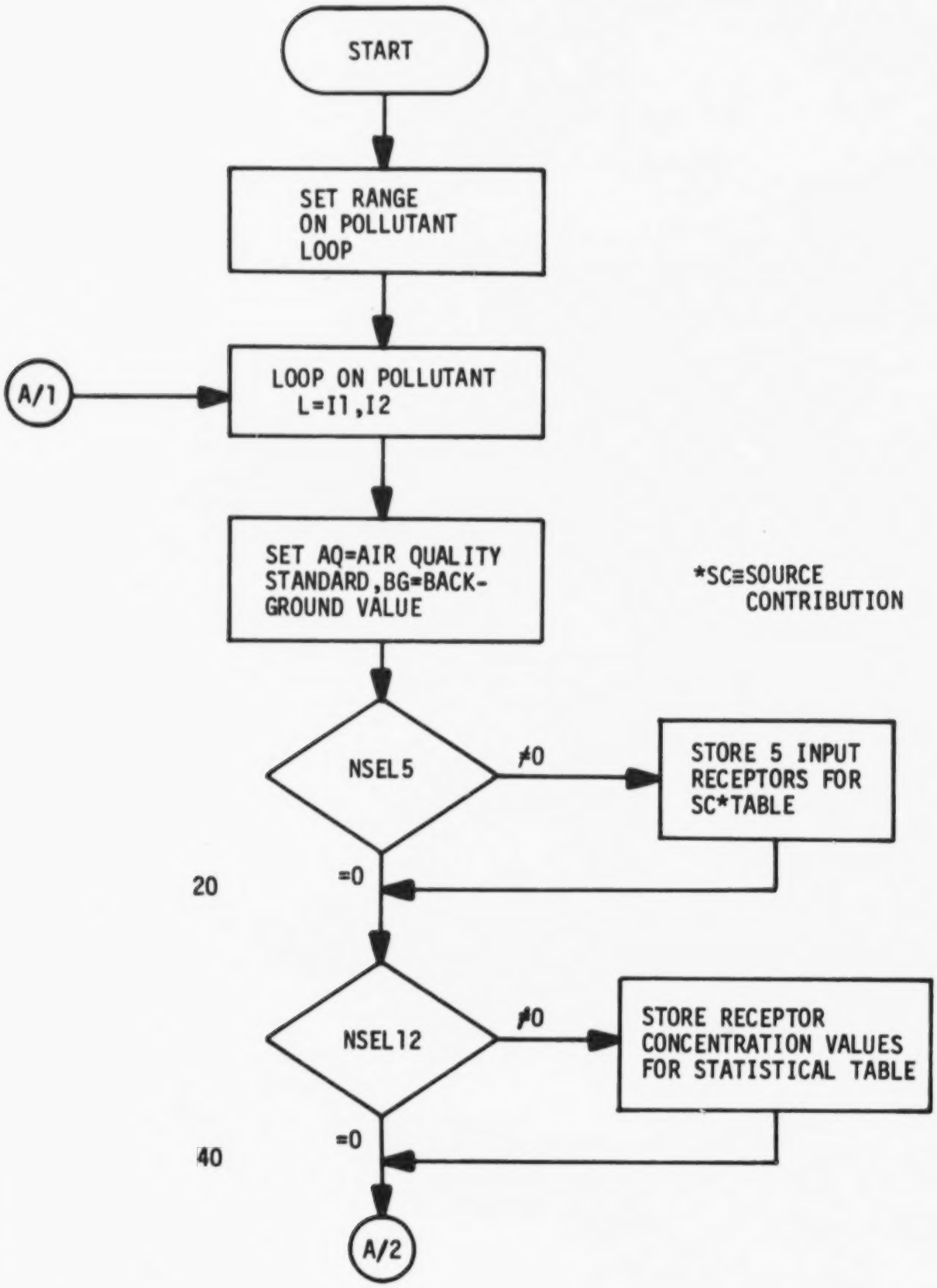
SUBROUTINES

ORDER Sorts array of receptors with concentrations above standard in descending order.

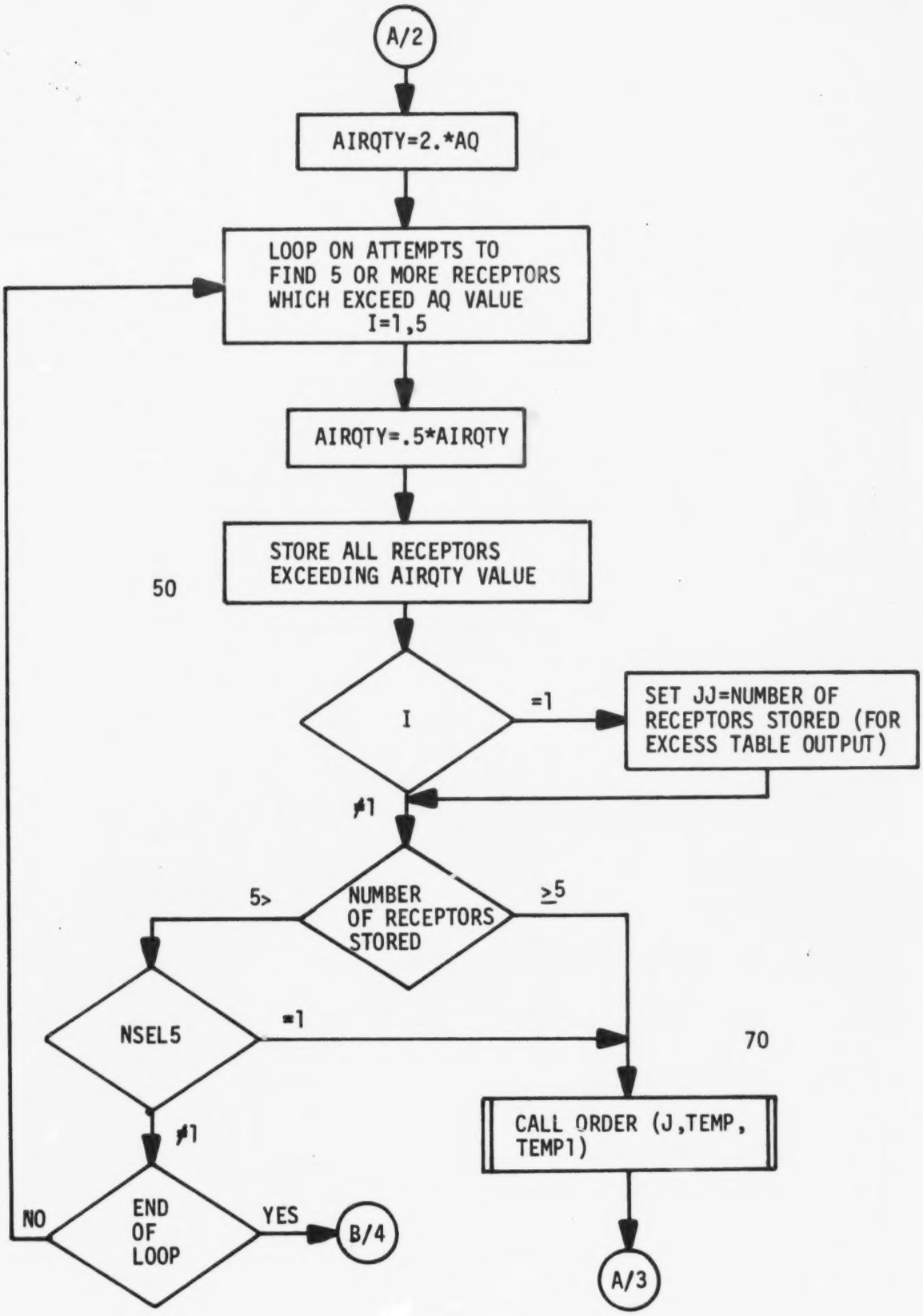
INPUT/OUTPUT

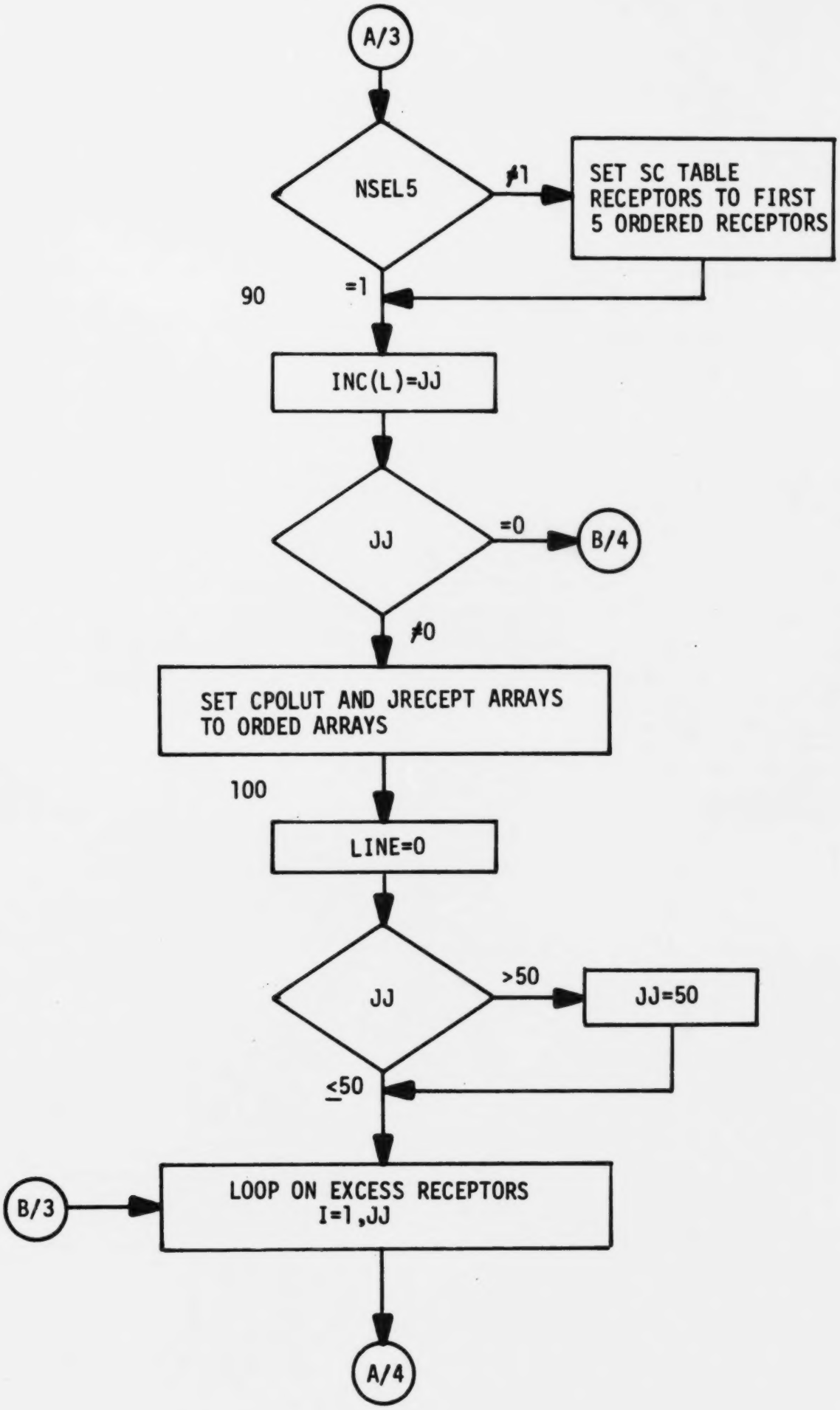
Common blocks AIRQ, INPT, RCPT, SLCT and XTRM (see BLOCK DATA for definition of variables).

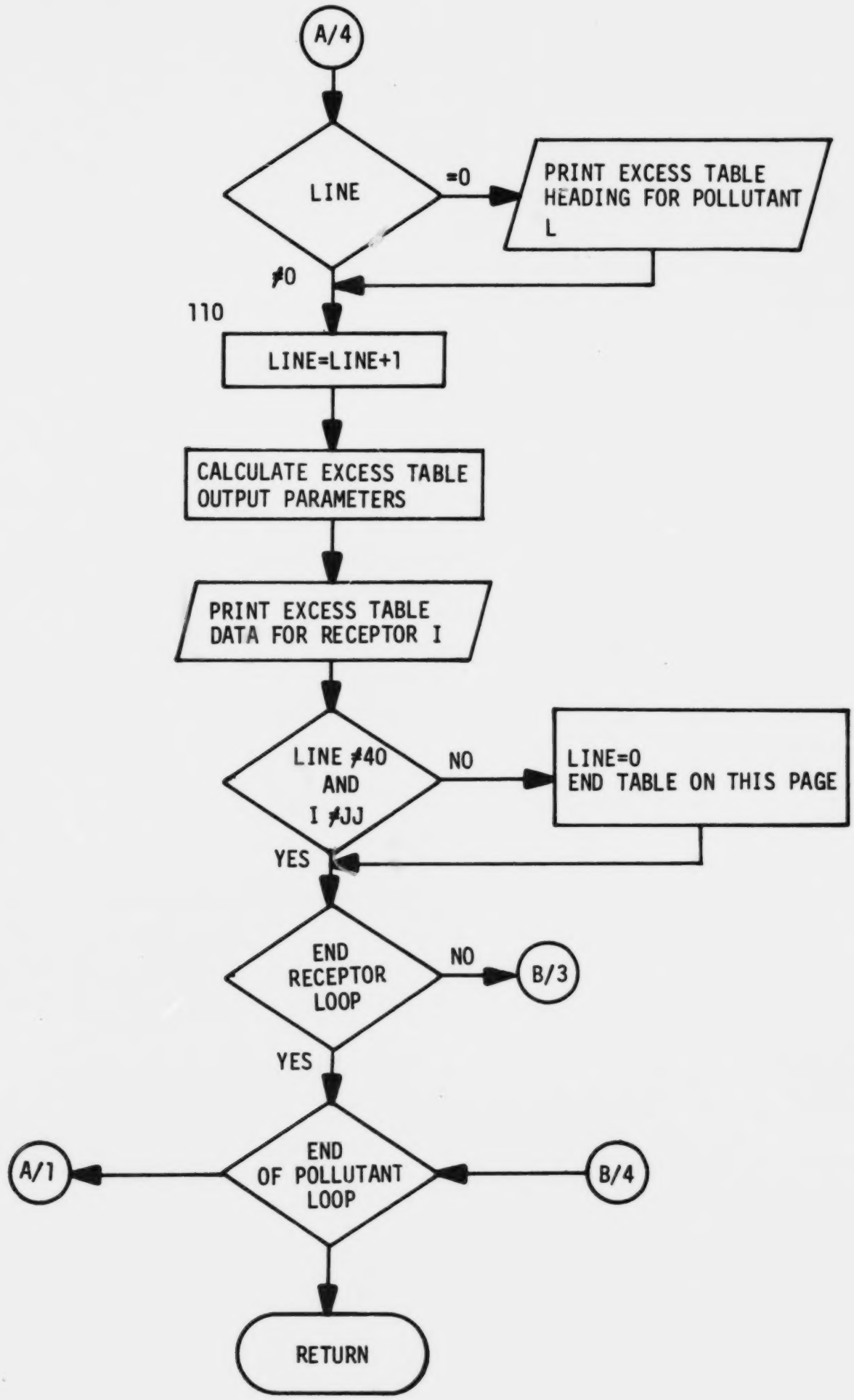
SUBROUTINE EXCEED



*SC≡SOURCE CONTRIBUTION


A/2
AIRQTY=2.*AQ
LOOP ON ATTEMPTS TO FIND 5 OR MORE RECEPTORS WHICH EXCEED AQ VALUE
I=1,5
AIRQTY=.5*AIRQTY
STORE ALL RECEPTORS EXCEEDING AIRQTY VALUE
50
I
=1
SET JJ=NUMBER OF RECEPTORS STORED (FOR EXCESS TABLE OUTPUT)
≠1
NUMBER OF RECEPTORS STORED
5>
≥5
NSEL5
=1
70
≠1
CALL ORDER (J,TEMP, TEMP1)
END OF LOOP
NO
YES
B/4
A/3


A/3
NSEL5
≠1
SET SC TABLE RECEPTORS TO FIRST 5 ORDERED RECEPTORS
90
=1
INC(L)=JJ
JJ
=0
B/4
≠0
SET CPOLUT AND JRECEPT ARRAYS TO ORDED ARRAYS
100
LINE=0
JJ
>50
JJ=50
≤50
B/3
LOOP ON EXCESS RECEPTORS
I=1,JJ
A/4


A/4
LINE
=0
PRINT EXCESS TABLE HEADING FOR POLLUTANT L
≠0
110
LINE=LINE+1
CALCULATE EXCESS TABLE OUTPUT PARAMETERS
PRINT EXCESS TABLE DATA FOR RECEPTOR I
LINE ≠40 AND I ≠JJ
NO
LINE=0
END TABLE ON THIS PAGE
YES
END RECEPTOR LOOP
NO
B/3
YES
END OF POLLUTANT LOOP
A/1
B/4
RETURN

```
0001            SUBROUTINE EXCEED
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    EXCEED                                           *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*****************************************************************
                C
0002             COMMON /AIRQ/ AQSTAN(2),DUM11(40)
                C
0003             COMMON /INPT/ REGION(6),DATE(5),DUM21(485),BACKGR(2),IPOLU1,
                1             DUM22(3)
                C
0004             COMMON /RCPT/ NRECEP,DUM31(3),DUM32(653),CPOLUT(2,275),
                1             PTCON(2,275),JRECEP(2,275),POLUT5(2,5)
                C
0005             COMMON /SLCT/ NSEL5,NSEL12,ICON(5,2),JSTAT(12,2),XP(2,12)
                C
0006             COMMON /XTRM/ DUM61(4),INC(2)
                C
                C
                C    ICON(5,2) = ICONS(5) + ICONP(5)
                C
                C    JSTAT(12,2) = ISTATS(12) + ISTATP(12)
                C
                C
0007             INTEGER*2 IPOLU1,DUM22,NRECEP,DUM31,JRECEP,NSEL5,NSEL12,ICON,
                1          JSTAT,INC
                C
                C
0008             DIMENSION TEMP(275),ITEMP(275)
                C
0009             INTEGER*2 ITEMP
                C
                C
0010             DIMENSION PART(3),TITLE1(11),TITLE2(7)
                C
0011             DATA SO2/'SO2 '/,PART/'PART','ICUL','ATE '/,
                1     TITLE1/'POLL','UTAN','T CO','NCEN','TRAT','IONS',' ABO',
                2            'VE S','TAND','ARD ','OF  '/,
                3     TITLE2/'MICR','OGRA','MS P','ER C','UBIC',' MET','ER  '/
                C
                C
```

```
0012            IP1=IPOLU1/2+1
0013            IP2=2-(IPOLU1+1)/2
0014            DO 130 L=IP1,IP2
                C
0015            AQ=AQSTAN(L)
                C
0016            BG=BACKGR(L)
                C
0017            IF(NSEL5.EQ.0) GO TO 20
                C
0018            DO 10 I=1,5
                C
0019            POLUT5(L,I)=CPOLUT(L,ICON(I,L))
                C
0020          10 CONTINUE
                C
0021          20 CONTINUE
                C
0022            IF(NSEL12.EQ.0) GO TO 40
                C
0023            DO 30 I=1,12
                C
0024            XP(L,I)=CPOLUT(L,JSTAT(I,L))
                C
0025          30 CONTINUE
                C
0026          40 CONTINUE
                C
0027            AIRQTY=2.0*AQ
                C
0028            DO 60 I=1,5
                C
0029            AIRQTY=0.5*AIRQTY
                C
0030            J=0
                C
0031            DO 50 IR=1,NRECEP
                C
0032            IF(CPOLUT(L,IR).LE.AIRQTY) GO TO 50
                C
0033            J=J+1
                C
0034            TEMP(J)=CPOLUT(L,IR)
                C
0035            ITEMP(J)=IR
                C
0036          50 CONTINUE
                C
0037            IF(I.EQ.1) JJ=J
                C
0038            IF(J.GE.5) GO TO 70
                C
```

```
0039                IF(NSEL5.EQ.1) GO TO 70
                C
0040              60 CONTINUE
                C
0041                GO TO 130
                C
0042              70 CONTINUE
                C
0043                CALL ORDER (J,TEMP,ITEMP)
                C
0044                IF(NSEL5.EQ.1) GO TO 90
                C
0045                DO 80 I=1,5
                C
0046                ICON(I,L)=ITEMP(I)
                C
0047              80 CONTINUE
                C
0048              90 CONTINUE
                C
0049                INC(L)=JJ
                C
0050                IF(JJ.EQ.0) GO TO 130
                C
0051                DO 100 I=1,JJ
                C
0052                CPOLUT(L,I)=TEMP(I)
                C
0053                JRECEP(L,I)=ITEMP(I)
                C
0054             100 CONTINUE
                C
                C
0055                LINE=0
                C
0056                IF(JJ.GT.50) JJ=50
                C
0057                DO 120 I=1,JJ
                C
0058                IF(LINE.NE.0) GO TO 110
                C
0059                WRITE(6,210) REGION,DATE
                C
0060                IF(L.EQ.1) WRITE(6,220) SC2,TITLE1,AQ,TITLE2
0061                IF(L.EQ.2) WRITE(6,230) PART,TITLE1,AQ,TITLE2
                C
0062                WRITE(6,240)
                C
0063             110 CONTINUE
                C
0064                LINE=LINE+1
                C
```

```
0065            IR=JRECEP(L,I)
                C
0066            CP=CPOLUT(L,I)
                C
0067            EXCESS=CP-AQ
                C
0068            PC=PTCON(L,IR)
                C
0069            AC=CP-PC-BG
                C
0070            REDPC=100.0*EXCESS/PC
                C
0071            REDAC=100.0*EXCESS/(CP-BG)
                C
0072            WRITE(6,250) IR,CP,EXCESS,PC,AC,REDPC,REDAC
                C
0073            IF(LINE.NE.40.AND.I.NE.JJ) GO TO 120
                C
0074            LINE=0
                C
0075            WRITE(6,260)
                C
0076          120 CONTINUE
                C
                C
0077          130 CONTINUE
                C
                C
0078            RETURN
                C
                C
0079          210 FORMAT('1',10X,'REGION: ',6A4,58X,'DATE: ',5A4//
                1       7X,29('____'),'___'/
                2       6X,'|',119X,'|')
                C
0080          220 FORMAT(6X,'|',19X,11A4,A2,F7.2,1X,7A4,18X,'|')
                C
0081          230 FORMAT(6X,'|',15X,13A4,A2,F7.2,1X,7A4,14X,'|')
                C
0082          240 FORMAT(6X,'|',29('____'),'___|'/
                1       6X,'|',10X,'|',76X,'|',31X,'|'/
                2       6X,'|',10X,'|',12X,'POLLUTANT CONCENTRATION (MICROGRAMS ',
                3       'PER CUBIC METER)',12X,'| POLLUTANT REDUCTION (PERCENT) |'/
                4       6X,'|',10X,'|',19('____'),'|',7('____'),'___|'/
                5       6X,'| RECEPTOR |',17X,'|',18X,'|',2(19X,'|'),2(15X,'|')/
                6       6X,'|  NUMBER  | ARITHMETIC MEAN | EXCESS ABOVE AIR |',
                7       2(' CONTRIBUTION FROM |'),2(' NECESSARY FOR |')/
                8       6X,'|',10X,'|',2X,'CONCENTRATION',2X,'| QUALITY STANDA',
                9       'RD |',3X,'POINT SOURCES',3X,'|',3X,'AREA SOURCES',4X,
                A       '| POINT SOURCES |  ALL SOURCES  |'/
                B       6X,'|__',2('____'),2('|_',4('____')),'_|',
                C       2(4('____'),'___|'),2(3('____'),'___|')/
                
                D       6X,'|',10X,'|',17X,'|',18X,'|',2(19X,'|'),2(15X,'|'))
                C
0083          250 FORMAT(6X,'|',I6,4X,'|',F12.4,5X,'|',F12.4,6X,'|',2(F13.4,6X,'|'),
                1       2(F11.4,4X,'|'))
                C
0084          260 FORMAT(6X,'|',10X,'|',17X,'|',18X,'|',2(19X,'|'),2(15X,'|')/
                1       '+',6X,29('____'),'___')
                C
                C
0085            END
```

SUBPROGRAM ORDER

PURPOSE

To sort receptor data (identification number and concentration value) in descending order of concentration value.

CALLING SEQUENCE

CALL ORDER (M,A,IA).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE

1. Sort, in descending order, the "M" elements of the array "A", maintaining the correct identification array "IA."

SUBROUTINES

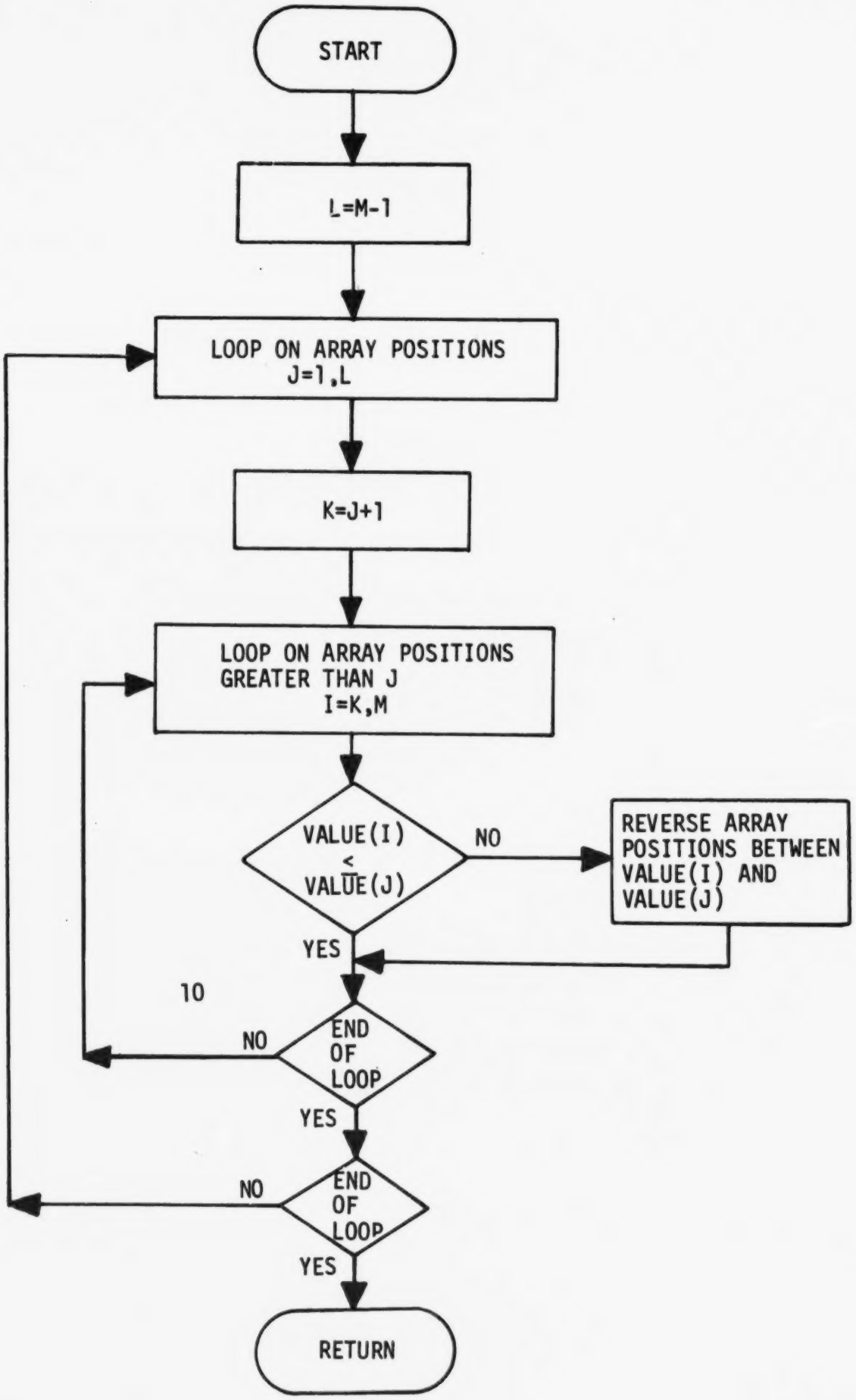
None.

INPUT/OUTPUT VARIABLES

Calling sequence variables:

M	Number of receptors in array.
A	Receptor concentration values.
IA	Receptor identification numbers.

SUBROUTINE ORDER (M,A,IA)



```
0001            SUBROUTINE ORDEP (M,A,IA)
                C
                C*****************************************************************
                C*                                                               *
                C*    TITLE:    ORDER                                            *
                C*                                                               *
                C*    AUTHOR:   TRW SYSTEMS GROUP                                *
                C*              WASHINGTON OPERATIONS                            *
                C*              WASHINGTON, D.C.                                 *
                C*                                                               *
                C*    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
                C*                                                               *
                C*    LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
                C*                                                               *
                C*    ABSTRACT:  THIS ROUTINE SORTS, IN DESCENDING ORDER,        *
                C*               THE "M" ELEMENTS OF THE "A" ARRAY.              *
                C*                                                               *
                C*****************************************************************
                C
                C
0002                DIMENSION A(M),IA(M)
                C
0003                INTEGER*2 IA
                C
                C
0004                L=M-1
                C
0005                DO 20 J=1,L
                C
0006                K=J+1
                C
0007                DO 10 I=K,M
                C
0008                IF(A(I).LE.A(J)) GO TO 10
                C
0009                B=A(I)
0010                A(I)=A(J)
0011                A(J)=B
                C
0012                IB=IA(I)
0013                IA(I)=IA(J)
0014                IA(J)=IB
                C
0015              10 CONTINUE
                C
0016              20 CONTINUE
                C
                C
0017                RETURN
                C
                C
0018                END
```

SUBPROGRAM SEL12

PURPOSE

To calculate and print statistical output data.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE

1. Write Statistical Data table heading.
2. Calculate new standard geometric deviation, geometric mean and maximum concentration values.
3. Calculate percentile concentration values.
4. Print statistical data.

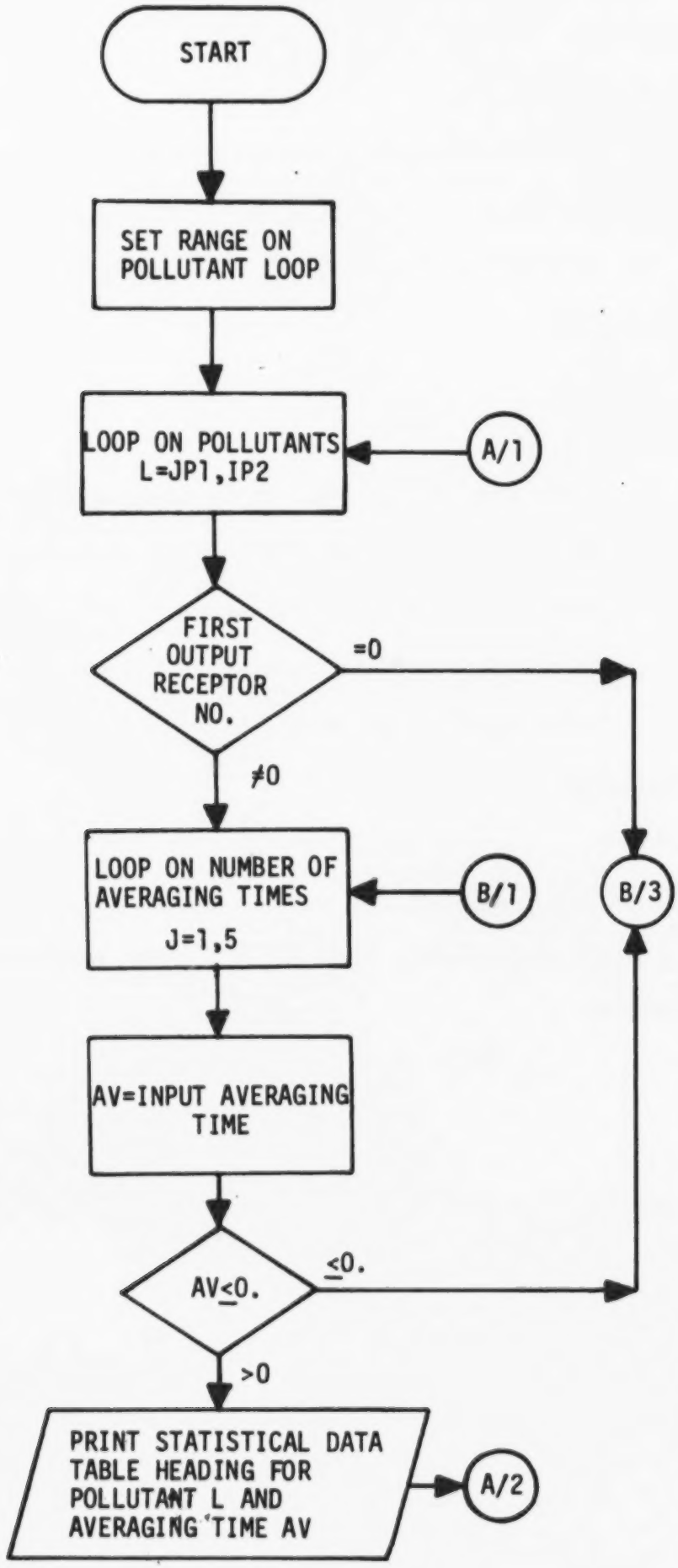
SUBROUTINES

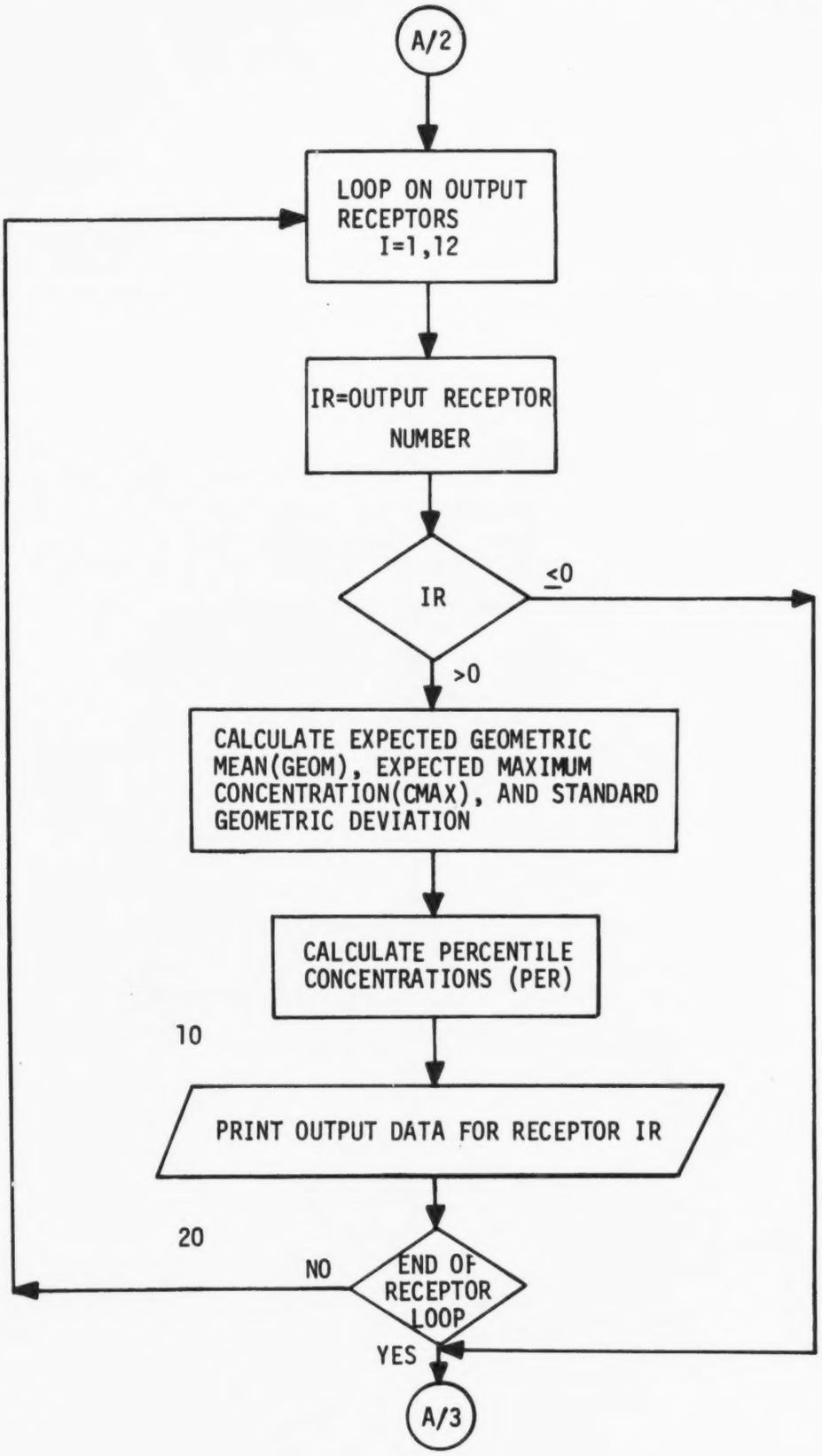
None.

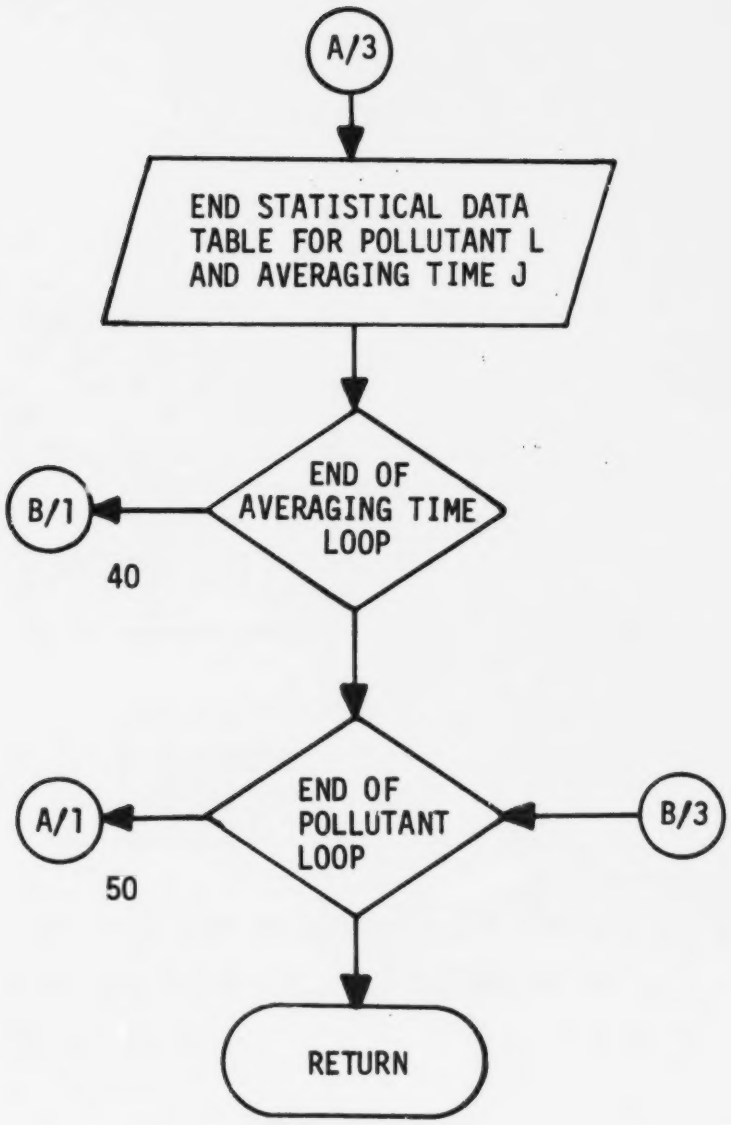
INPUT/OUTPUT VARIABLES

Common blocks AIRQ, INPT AND SLCT (see BLOCK DATA for definition of variables).

SUBROUTINE SEL12




A/2
LOOP ON OUTPUT RECEPTORS I=1,12
IR=OUTPUT RECEPTOR NUMBER
IR
≤0
>0
CALCULATE EXPECTED GEOMETRIC MEAN(GEOM), EXPECTED MAXIMUM CONCENTRATION(CMAX), AND STANDARD GEOMETRIC DEVIATION
CALCULATE PERCENTILE CONCENTRATIONS (PER)
10
PRINT OUTPUT DATA FOR RECEPTOR IR
20
NO
END OF RECEPTOR LOOP
YES
A/3


A/3
END STATISTICAL DATA TABLE FOR POLLUTANT L AND AVERAGING TIME J
END OF AVERAGING TIME LOOP
B/1
40
END OF POLLUTANT LOOP
A/1
50
B/3
RETURN

```
0001            SUBROUTINE SEL12
C
C     ******************************************************************
C     *                                                                *
C     *    TITLE:   SEL12                                              *
C     *                                                                *
C     *    AUTHOR:  TRW SYSTEMS GROUP                                  *
C     *             WASHINGTON OPERATIONS                              *
C     *             WASHINGTON, D.C.                                   *
C     *                                                                *
C     *    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                   *
C     *                                                                *
C     *    LANGUAGE USED:  FORTRAN IV - G LEVEL                        *
C     *                                                                *
C     ******************************************************************
C
0002            COMMON /AIRQ/ DUM11(2),SGD(12,2),AVG(5,2),PER(3,2)
C
0003            COMMON /INPT/ REGION(6),DATE(5),DUM21(487),IPOLU1,DUM22(3)
C
0004            COMMON /SLCT/ DUM51(6),JSTAT(12,2),XP(2,12)
C
C
C     SGD(12,2) = SGDS(12) + SGDP(12)
C
C     AVG(5,2) = SO2AVG(5) + PARAVG(5)
C
C     PER(3,2) = SO2PER(3) + PARPER(3)
C
C     JSTAT(12,2) = ISTATS(12) + ISTATP(12)
C
C
0005            INTEGER*2 IPOLU1,DUM22,JSTAT
C
C
0006            DIMENSION CPER(3)
C
C
0007            DATA A0/2.515517/,A1/0.802853/,A2/0.010328/,B1/1.432788/,
               1     B2/0.189269/,B3/0.001308/
C
C
0008            DIMENSION PART(3),TITLE(17)
C
0009            DATA SO2/'SO2 '/,PART/'PART','ICUL','ATE '/,
               1     TITLE/'STAT','ISTI','CAL ','DATA',' AT ','SELE','CTED',
               2           ' REC','EPTO','RS (','MICR','OGRA','MS P','ER C',
               3           'UBIC',' MET','ER) '/
C
C
0010            IP1=IPOLU1/2+1
```

```
0011                IP2=2-(IPOLU1+1)/2
0012                DO 50 L=IP1,IP2
                C
0013                IF(JSTAT(1,L).EQ.0) GO TO 50
                C
                C
0014                DO 40 J=1,5
                C
0015                AV=AVG(J,L)
                C
0016                IF(AV.LE.0.0) GO TO 50
                C
0017                ALAV=ALOG(AV)
                C
                C
0018                WRITE(6,110) REGION,DATE,AV
                C
0019                IF(L.EQ.1) WRITE(6,120) SC2,TITLE
0020                IF(L.EQ.2) WRITE(6,130) PART,TITLE
                C
0021                WRITE(6,140) PER(1,L),PER(2,L),PER(3,L)
                C
                C
0022                DO 20 I=1,12
                C
0023                IR=JSTAT(I,L)
                C
0024                IF(IR.LE.0) GO TO 30
                C
0025                X=XP(L,I)
                C
0026                SG=SGD(I,L)
                C
0027                ALSG=ALOG(SG)
                C
0028                GEOM=X*SG**(ALSG*(ALAV-9.078)/11.8)
                C
0029                SIG=SG**SQRT(1.54-ALAV/5.9)
                C
0030                U=SQRT(19.17756-2.0*ALAV)
                C
0031                FREQ=U-(A0+A1*U+A2*U*U)/(1.0+B1*U+B2*U*U+B3*U*U*U)
                C
0032                CMAX=GEOM*SIG**FREQ
                C
                C
0033                DO 10 K=1,3
                C
0034                FREQ=0.01*PER(K,L)
                C
0035                CPER(K)=0.0
                C
```

```
0036                IF(FREQ.LE.0.0) GO TO 10
                C
0037                U=SQRT(-2.0*ALOG(FREQ))
                C
0038                FREQ=U-(A0+A1*U+A2*U*U)/(1.0+B1*U+B2*U*U+B3*U*U*U)
                C
0039                CPER(K)=GEOM*SIG**FREQ
                C
0040             10 CONTINUE
                C
                C
0041                WRITE(6,150) IR,X,GEOM,CPER(1),CPER(2),CPER(3),CMAX,SIG
                C
                C
0042             20 CONTINUE
                C
                C
0043             30 CONTINUE
                C
                C
0044                WRITE(6,160)
                C
                C
0045             40 CONTINUE
                C
                C
0046             50 CONTINUE
                C
                C
0047                RETURN
                C
                C
0048           110 FORMAT('1'////////15X,'REGION: ',6A4,50X,'DATE: ',5A4/////
                  1        12X,'AVERAGING TIME =',F7.1,' HOURS'//
                  2        11X,27('____'),'___'/
                  3        10X,'|',111X,'|')
                C
0049           120 FORMAT(10X,'|',20X,18A4,19X,'|')
                C
0050           130 FORMAT(10X,'|',16X,20A4,15X,'|')
                C
0051           140 FORMAT(10X,'|',27('____'),'___|'/
                  1        2(10X,'|'),1X,2(11X,'|'),4(15X,'|'),11X,'|'/
                  2        10X,'| SELECTED |',1X,2(' EXPECTED  |'),3(F10.2,5X,'|'),
                  3        3X,'EXPECTED',4X,'| STANDARD  |'/
                  4        10X,'| RECEPTOR | ARITHMETIC | GEOMETRIC |',
                  5        3(2X,'PERCENTILE',3X,'|'),4X,'MAXIMUM',4X,'| GEOMETRIC |'/
                  6        10X,'|',2X,'NUMBER',2X,'|',1X,2(3X,'MEAN',4X,'|'),
                  7        4(' CONCENTRATION |'),' DEVIATION |'/
                  8        10X,'|',2('____'),'__|_',2(2('____'),'___|'),
                  9        4(3('____'),'___|'),2('____'),'___|'/
                  A        2(10X,'|'),1X,2(11X,'|'),4(15X,'|'),11X,'|')
                C
0052           150 FORMAT(10X,'|',I7,3X,'|',1X,2(F8.2,3X,'|'),4(F10.2,5X,'|'),F8.2,
                  1        3X,'|'/2(10X,'|'),1X,2(11X,'|'),4(15X,'|'),11X,'|')
                C
0053           160 FORMAT('+',10X,27('____'),'___')
                C
                C
0054                END
```

SUBPROGRAM POLUT2

PURPOSE

To calculate pollution concentration values from each source to five selected receptors.

CALLING SEQUENCE

CALL POLUT2 (N, PLUME, SOURCE, SINTEN, L,J).

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT/OUTPUT

None.

PROCEDURE*

1. Initialize variables.
2. Calculate downwind and crosswind distances and test for non-applicable source-receptor combinations.
3. Test and scale area sources as a function of source-receptor location.
4. Set wind speed and stability dependent variables and calculate plume dispersion and mixing height.
5. Use appropriate diffusion equation to calculate pollutant concentration from source J.
6. Sum contribution from sources to receptor K.

SUBROUTINES

None.

INPUT/OUTPUT VARIABLES

Common blocks INPT, RCPT and SLCT (see BLOCK DATA for definition of variables) and calling sequence variables (see DIM for definition of variables).

*See Flow Chart for POLUT

```
0001          SUBROUTINE POLUT2 (N,PLUME,SOURCE,SINTEN,L,J)
        C
        C     ***********************************************************************
        C                                                                           *
        C     *    TITLE:    POLUT2                                                 *
        C     *                                                                     *
        C     *    AUTHOR:   TRW SYSTEMS GROUP                                      *
        C     *              WASHINGTON OPERATIONS                                  *
        C     *              WASHINGTON, D.C.                                       *
        C     *                                                                     *
        C     *    COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                        *
        C     *                                                                     *
        C     *    LANGUAGE USED:  FORTRAN IV - G LEVEL                             *
        C     *                                                                     *
        C     ***********************************************************************
        C
        C
0002          COMMON /INPT/ DUM21(11),DPTHMX,WNDFRQ(6,16,5),TA,PA,BLIFE(2),
             1              DUM22(2),IPOLU1,DUM23(1),DUM24(1),NSORCE
        C
0003          COMMON /RCPT/ DUM31(105),RECEPT(2,275),CPOLUT(2,275),DUM32(835)
        C
0004          COMMON /SLCT/ DUM51(1),ICON(5,2),DUM52(36)
        C
        C
        C     ICON(5,2) = ICONS(5) + ICONP(5)
        C
        C
0005          DIMENSION PLUME(N,5),SOURCE(3,N),SINTEN(2,N)
        C
0006          INTEGER*2 IPOLU1,DUM23,DUM24,NSORCE,ICON
        C
        C
0007          DIMENSION WD(20),COSWD(16),SINWD(16),UU(6),A(7),B(7),C(7)
        C
0008          LOGICAL*1 POINT,SGTDMX
        C
0009          EQUIVALENCE (SINWD(1),WD(1)),(COSWD(1),WD(5))
        C
        C
0010          DATA WD/0.0,0.38268,0.70711,0.92388,1.0,0.92388,0.70711,0.38268,
             1        0.0,-0.38268,-0.70711,-0.92388,-1.0,-0.92388,-0.70711,
             2        -0.38268,0.0,0.38268,0.70711,0.92388/
        C
0011          DATA UU/0.67056,2.45872,4.47040,6.92912,9.61136,12.51712/
        C
0012          DATA A/0.001,0.048,0.119,2.61,52.6,0.187,0.135/
        C
0013          DATA B/1.89,1.11,0.915,0.45,0.15,0.755,0.745/
        C
0014          DATA C/9.6,2.0,0.0,-25.5,-126.0,-1.4,-1.1/
        C
```

NOT REPRODUCIBLE

```
0015                  DATA PI8/0.3926991/
                C
                C
                C     IP1=IPOLU1/2+1
                C     IP2=2-(IPOLU1+1)/2
                C     DO 6000 L=IP1,IP2
                C
0016                  BLIF=BLIFE(L)
                C
                C     DO 4000 J=1,NSOPCE
                C
0017                  HS=PLUME(J,1)
0018                  VS=PLUME(J,2)
0019                  DS=PLUME(J,3)
0020                  TS=PLUME(J,4)
0021                  EPLUME=PLUME(J,5)
                C
0022                  SDIAM=SOURCE(3,J)
0023                  SRAD=0.5*SDIAM
                C
0024                  SINT=SINTEN(L,J)
                C
0025                  DO 5000 K=1,5
                C
0026                  CPOLUT(L,K)=0.0
                C
0027                  IR=ICON(K,L)
                C
0028                  XOB=RECEPT(1,IR)
0029                  YOB=RECEPT(2,IR)
                C
0030                  XDIFF=SOURCE(1,J)-XOB
0031                  YDIFF=SOURCE(2,J)-YOB
                C
0032                  POINT=.FALSE.
0033                  I1=1
0034                  I2=16
                C
0035                  IF(SDIAM.GT.0.001) GO TO 10
                C
0036                  DIST=SQRT(XDIFF*XDIFF+YDIFF*YDIFF)
0037                  IF(DIST.LT.0.01) GO TO 5000
                C
0038                  POINT=.TRUE.
0039                  I1=IFIX(ATAN2(XDIFF,YDIFF)/PI8)+1
0040                  IF(XDIFF.LT.0.0) I1=I1+16
0041                  I2=I1+1
                C
0042               10 CONTINUE
                C
0043                  DO 3000 II=I1,I2
                C
```

```
0044                I=II
0045                IF(I.EQ.17) I=1
                C
0046                DNWIND=1000.0*(YDIFF*COSWD(I)+XDIFF*SINWD(I))
0047                X=DNWIND
                C
0048                IF(POINT) GO TO 20
                C
0049                X=DNWIND+SDIAM/PI8
                C
0050                IF(SRAD+DNWIND.LT.10.0) GO TO 3000
                C
0051             20 CONTINUE
                C
0052                CXWIND=1000.0*ABS(YDIFF*SINWD(I)-XDIFF*COSWD(I))
0053                Y=X*PI8
                C
0054                IF(Y.LE.CXWIND) GO TO 3000
                C
0055                Q=1.0
                C
0056                IF(POINT) GO TO 40
                C
0057                IF(SRAD.GT.ABS(DNWIND)) GO TO 30
                C
0058                IF(SDIAM.LE.DNWIND*PI8) GO TO 40
                C
0059                Q=Y/SDIAM-1.0
0060                DNWIND=SQRT(DNWIND*DNWIND+SRAD*SRAD)
0061                X=2.0*DNWIND
                C
0062                IF(CXWIND-(SRAD+X*PI8)) 40,40,3000
                C
0063             30 CONTINUE
                C
0064                Q=0.5*PI8*(X/SDIAM-2.04)**2
0065                DNWIND=SINWD(3)*(DNWIND+SRAD)
0066                X=2.0*DNWIND
                C
0067                IF(CXWIND.GT.SRAD) GO TO 3000
                C
0068             40 CONTINUE
                C
0069                Q=Q*(1.0-CXWIND/Y)
                C
0070                DO 2000 IWS=1,6
                C
0071                U=UU(IWS)
                C
0072                DO 1000 LOOK=1,6
                C
0073                FREQ=1.0
```

```
0074                IF(LOOK.EQ.4) FREQ=0.4
0075                IF(LOOK.EQ.6) FREQ=0.6
                C
0076                LL=LOOK
0077                IF(LOOK.EQ.6) LL=4
                C
0078                DM=DPTHMX
0079                IF(LOOK.EQ.1) DM=1.5*DM
0080                IF(LOOK.EQ.4) DM=0.5*DM+50.0
0081                IF(LOOK.EQ.5) DM=100.0
                C
0082                Y=100.0*Q*WNDFRQ(IWS,I,LL)*FREQ/U
                C
0083                IF(Y.LT.0.001) GO TO 1000
                C
0084                IF(LOOK.EQ.5) LL=4
                C
0085                PHT=HS
                C
0086                IF(.NOT.POINT) GO TO 60
                C
0087                PLR=EPLUME
0088                CC=0.4
                C
0089                IF(EPLUME.GT.0.001) GO TO 50
                C
0090                IF(TS.LT.0.001) GO TO 60
                C
0091                PLR=VS*DS*(1.5+0.00268*DS*PA*(1.0-TA/TS))
0092                CC=0.1*FLOAT(LL)
                C
0093             50 CONTINUE
                C
0094                PHT=HS+((1.4-CC)*PLR/U)
                C
0095             60 CONTINUE
                C
0096                TEMP=-0.693*DNWIND/U
                C
0097                IF(PHT.GT.DM) GO TO 1000
0098                IF(DNWIND.GE.1000.0) GO TO 70
0099                IF(DNWIND.LT.100.0) DNWIND=100.0
                C
0100                IF(LL.GT.3) LL=LL+2
                C
0101             70 CONTINUE
                C
0102                SIGZ=A(LL)*DNWIND**B(LL)+C(LL)
                C
0103                IF(LL.GT.5) LL=LL-2
                C
0104                ARG1=-0.5*(PHT*PHT)/(SIGZ*SIGZ)
```

```
                C
0105                IF(ABS(ARG1).GT.60.0) GO TO 1000
                C
0106                SGTDMX=.TRUE.
0107                XD=X
0108                DD=0.47*DM
                C
0109                IF(SIGZ.LT.DD) GO TO 100
                C
0110                X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0111                IF(LL.LE.3) GO TO 80
                C
0112                IF(X1.GE.1000.0) GO TO 80
                C
0113                LL=LL+2
0114                X1=((DD-C(LL))/A(LL))**(1.0/B(LL))
                C
0115              80 CONTINUE
                C
0116                XTEMP=2.0*X1
                C
0117                IF(X.GE.XTEMP) GO TO 90
                C
0118                XD=XTEMP
0119                SGTDMX=.FALSE.
                C
0120              90 CONTINUE
                C
0121                C2=(0.0255*Y)/(DM*XD)
0122                C3=C2
                C
0123                IF(SGTDMX) GO TO 110
                C
0124                XD=X1
                C
0125                SIGZ=DD
                C
0126             100 CONTINUE
                C
0127                C1=(0.0203*Y*EXP(ARG1))/(SIGZ*XD)
0128                C3=C1
                C
0129                IF(.NOT.SGTDMX) C3=C1+(C2-C1)*(X/X1-1.0)
                C
0130             110 CONTINUE
                C
0131                ALIFE=1.0
                C
0132                IF(BLIF.LT.0.25) GO TO 120
                C
0133                TEMP1=TEMP/(3600.0*BLIF)
```

```
                C
0134                  IF(ABS(TEMP1).LT.0.005) GO TO 120
                C
0135                  ALIFE=0.0
                C
0136                  IF(TEMP1.LT.-180.218) GO TO 120
                C
0137                  ALIFE=EXP(TEMP1)
                C
0138              120 CONTINUE
                C
0139                  CPOLUT(L,K)=CPOLUT(L,K)+C3*ALIFE*SINT
                C
0140             1000 CONTINUE
                C
0141             2000 CONTINUE
                C
0142             3000 CONTINUE
                C
0143             5000 CONTINUE
                C
                C4000 CONTINUE
                C
                C6000 CONTINUE
                C
                C
0144                  RETURN
                C
0145                  END
```

PROGRAM TAPE MERGE

PURPOSE

To merge multiple Source Contribution Files onto a single file.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV, G LEVEL, OS RELEASE 18.

INPUT

Source Contribution File number 1 (TAPE)

Source Contribution File number 2 (TAPE)

OUTPUT

Merged Source Contribution File (TAPE)

PROCEDURE

1. Write first record onto merged file using total number of receptors on both input files.
2. Write receptor records from input file 1 onto merge file.
3. Write source records from input file 1 onto merge file.
4. Write receptor records from input file 2 onto merge file using a continuous receptor numbering system.
5. Write source records from input file 2 onto merge file.
6. Rewind merge file.

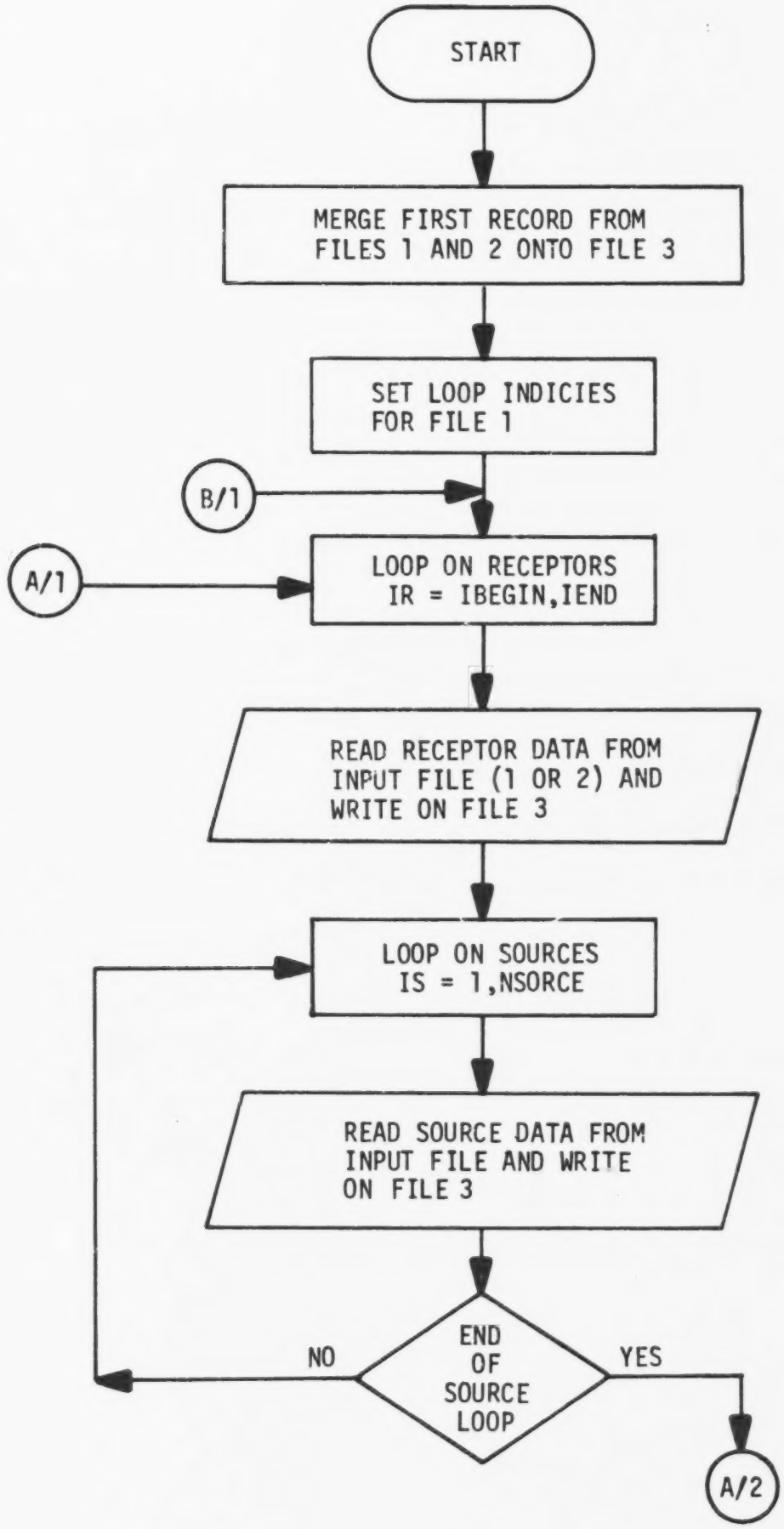
SUBROUTINES

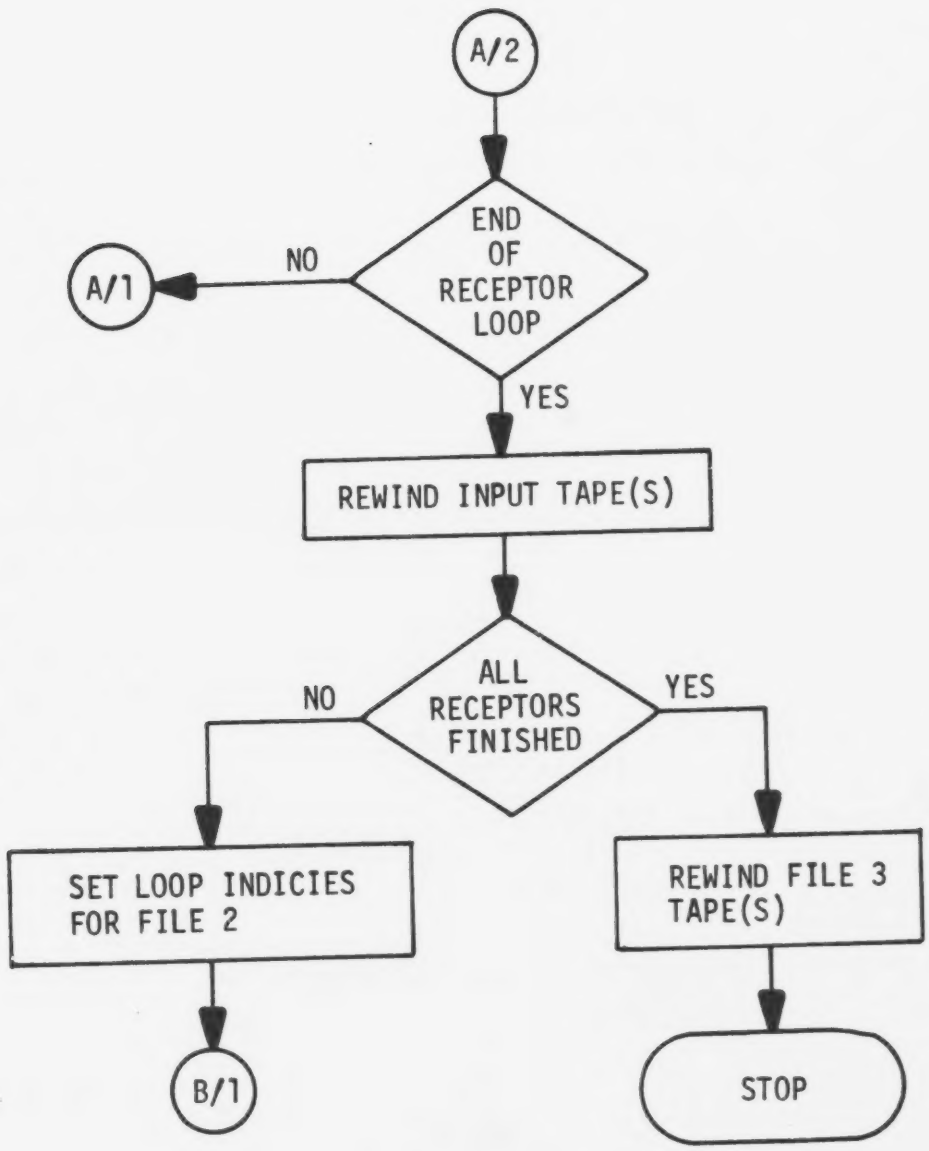
None

INPUT/OUTPUT VARIABLES

None

TAPE MERGE


START
MERGE FIRST RECORD FROM FILES 1 AND 2 ONTO FILE 3
SET LOOP INDICIES FOR FILE 1
B/1
A/1
LOOP ON RECEPTORS IR = IBEGIN,IEND
READ RECEPTOR DATA FROM INPUT FILE (1 OR 2) AND WRITE ON FILE 3
LOOP ON SOURCES IS = 1,NSORCE
READ SOURCE DATA FROM INPUT FILE AND WRITE ON FILE 3
END OF SOURCE LOOP
NO
YES
A/2


A/2
END OF RECEPTOR LOOP
NO
A/1
YES
REWIND INPUT TAPE(S)
ALL RECEPTORS FINISHED
NO
YES
SET LOOP INDICIES FOR FILE 2
B/1
REWIND FILE 3 TAPE(S)
STOP

```
C     TAPE MERGE
C
C     ******************************************************************
C     *                                                                *
C     *     TITLE:    TAPE MERGE                                       *
C     *                                                                *
C     *     AUTHOR:   TRW SYSTEMS GROUP                                *
C     *               WASHINGTON OPERATIONS                            *
C     *               WASHINGTON, D.C.                                 *
C     *                                                                *
C     *     COMPUTER SYSTEM:  IBM SYSTEM 360/MODEL 40                  *
C     *                                                                *
C     *     LANGUAGE USED:  FORTRAN IV - G LEVEL                       *
C     *                                                                *
C     ******************************************************************
C
C
0001          DIMENSION DATE(5),BACKGR(2),AC(2),BC(2)
C
C
0002          READ(11) IRECEP,NSORCE,(DATE(I),I=1,5),(BACKGR(I),I=1,2),
             1         (AC(I),I=1,2),(BC(I),I=1,2)
C
0003          READ(12) JRECEP
C
0004          NRECEP=IRECEP+JRECEP
C
0005          WRITE(13) NRECEP,NSORCE,(DATE(I),I=1,5),(BACKGR(I),I=1,2),
             1          (AC(I),I=1,2),(BC(I),I=1,2)
C
C
0006          ITAPE=11
0007          IBEGIN=1
0008          IEND=IRECEP
C
0009       10 CONTINUE
C
0010          DO 30 IR=IBEGIN,IEND
C
0011          READ(ITAPE) X,Y
0012          WRITE(13) X,Y,IR
C
0013          DO 20 IS=1,NSORCE
C
0014          READ(ITAPE) JSIC,JSITE,JPJ,SO2SC,PARSC
0015          WRITE(13) JSIC,JSITE,JPJ,SO2SC,PARSC
C
0016       20 CONTINUE
C
0017       30 CONTINUE
C
0018          REWIND ITAPE
C
0019          IF(IEND.GE.NRECEP) GO TO 40
C
0020          ITAPE=12
0021          IBEGIN=IRECEP+1
0022          IEND=NRECEP
C
0023          GO TO 10
C
0024       40 CONTINUE
C
0025          REWIND 13
C
C
0026          STOP
C
0027          END
```

PROGRAM MAIN (Control Cost Program)

PURPOSE

The Control Cost Program generates cost data and control device effectiveness estimates for each point source contained on the Source File. The cost information generated by the program is used to evaluate the various emission control strategies specified for the region.

COMPUTER LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

Emission Source Information (TAPE)
Regional Information (CARD READER)
Control Device Information (CARD READER & PRESET)
Device Applicability Information (CARD READER & PRESET)
Date and Control Flags (CARD READER)

OUTPUT

Control Cost Output (PRINTER)
Error Messages (Intermediate TAPE)
Error List (PRINTER)
Regional Information (PRINTER)
Control Device Information (PRINTER)
Device Applicability Information (PRINTER)

PROCEDURE

1. Obtain all data and print (except Source file).
2. Read a Source if this is the end of point sources write errors and stop.
3. Write source to output.
4. Calculate fuel parameters.
5. Apply next device to source if all devices have been applied return to 2.
6. If the device is not applicable, return to 5.
7. If this is a fuel switching device, skip to 15.
8. Calculate new stack parameters.
9. Calculate list price depending on device number.
10. Calculate installation cost, capital recovery factor, and annual capital charge, then obtain correction factor for existing device.

11. Calculate rated efficiencies for the device.
12. Calculate operating and maintenance cost.
13. Calculate Total Annual cost.
14. Print and write data and return to 5.
15. If fuel measure is not applicable, return to 5.
16. Find fuel for switching.
17. Calculate heat content, fuel burned and sulfur content.
18. Determine cost of old fuels and emissions.
19. Compute new fuel quantities, new costs, additional or total annual cost, new emissions, new device efficiencies, allowable emission, and resultant fuel quantities (old and new).
20. Return to 14.

SUBROUTINES

WSOUR	Prints the control cost data.
DEVAPL	Reads and prints the namelist device applicability data.
WREGR	Prints the regional data.
WDEVR	Prints the device data.
EXDEVC	Calculates a corrected control efficiency for particulate emissions.

INPUT/OUTPUT VARIABLES

DDATE	Date of run input via cards.
REGRO	Common block containing regional data.
SOURCO	Common block containing source, cost, and control effectiveness data.
DEVICE	Common block containing the device data.

Common blocks/DEVICE/, /REGRO/ and DEVARO/ variables are the same as those described for the namelist inputs described in the User's Guide, Section 7.5 in Table 7.5-1. Common block/SOURCO/ contains the following elements for each point source:

ISIC	SIC number
ISIT	SITE number
IPRC	Process code
POLJUR	Political jurisdiction
PRTYPE	Process type
EMRAT	Emission rate for SO_2 and particulate

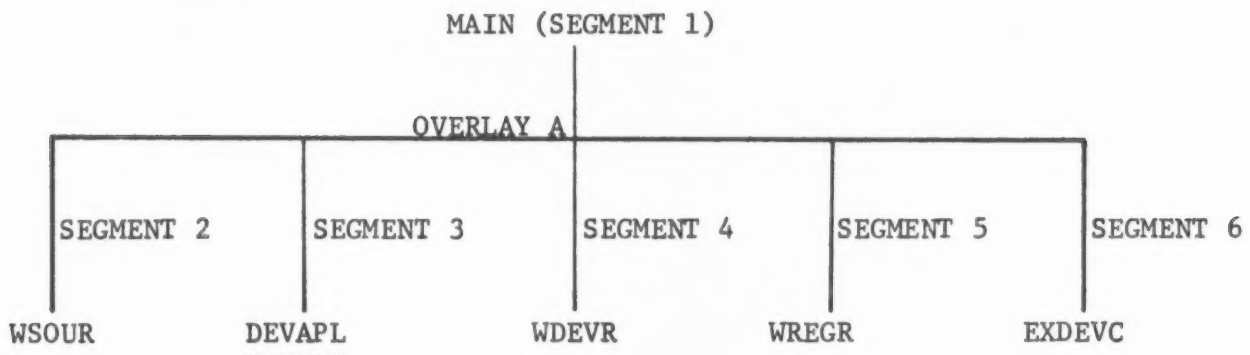
CONEFF	Existing control efficiencies for SO_2 and particulate
GENCAP	Rated capacity
OFHC	Heat content for coal, residual and distillate oil, and gas
PRCRTM	Maximum process rate
SHIFTS	Operating schedule
OUSEF	Use factor
PLUME	Normalized plume rise
IDX	Device number being applied
DEVEFF	Device efficiencies for SO_2 and particulate
TEXN	New exit temperature
ACFMN	New exhaust gas volume
TAC	Total annual cost
AMTR	New quantities of fuel burned for coal, residual and distillate oil, and gas
IGAS	Gas, cooling flag
CER	Cost effectiveness for SO_2 and particulate removal
ILIN	Number of lines printed on control cost output
SXOM	Sum of operating and maintenance expenses

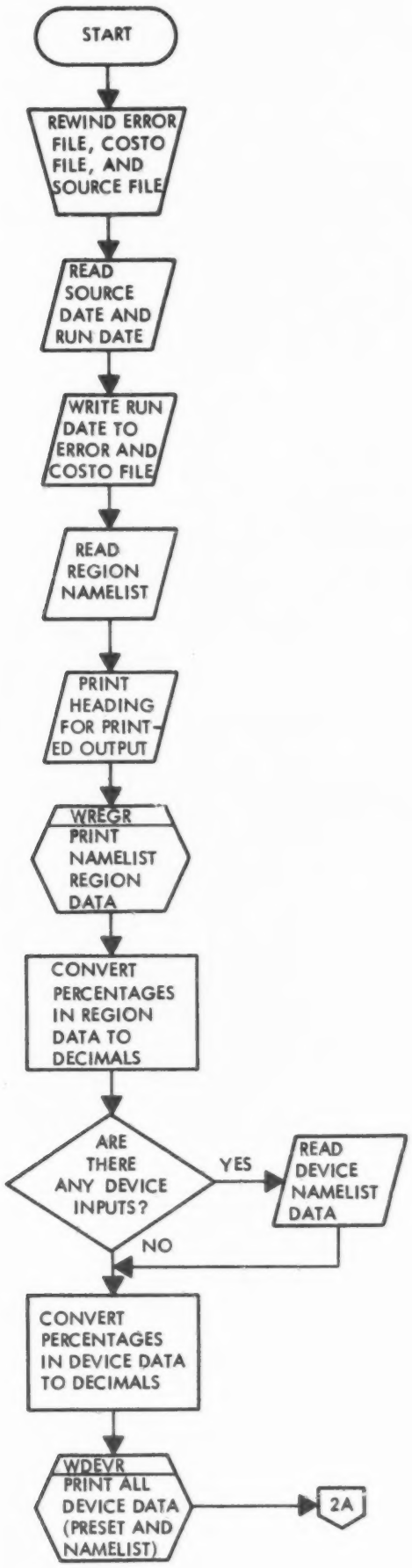
The following variables are input from the source file:

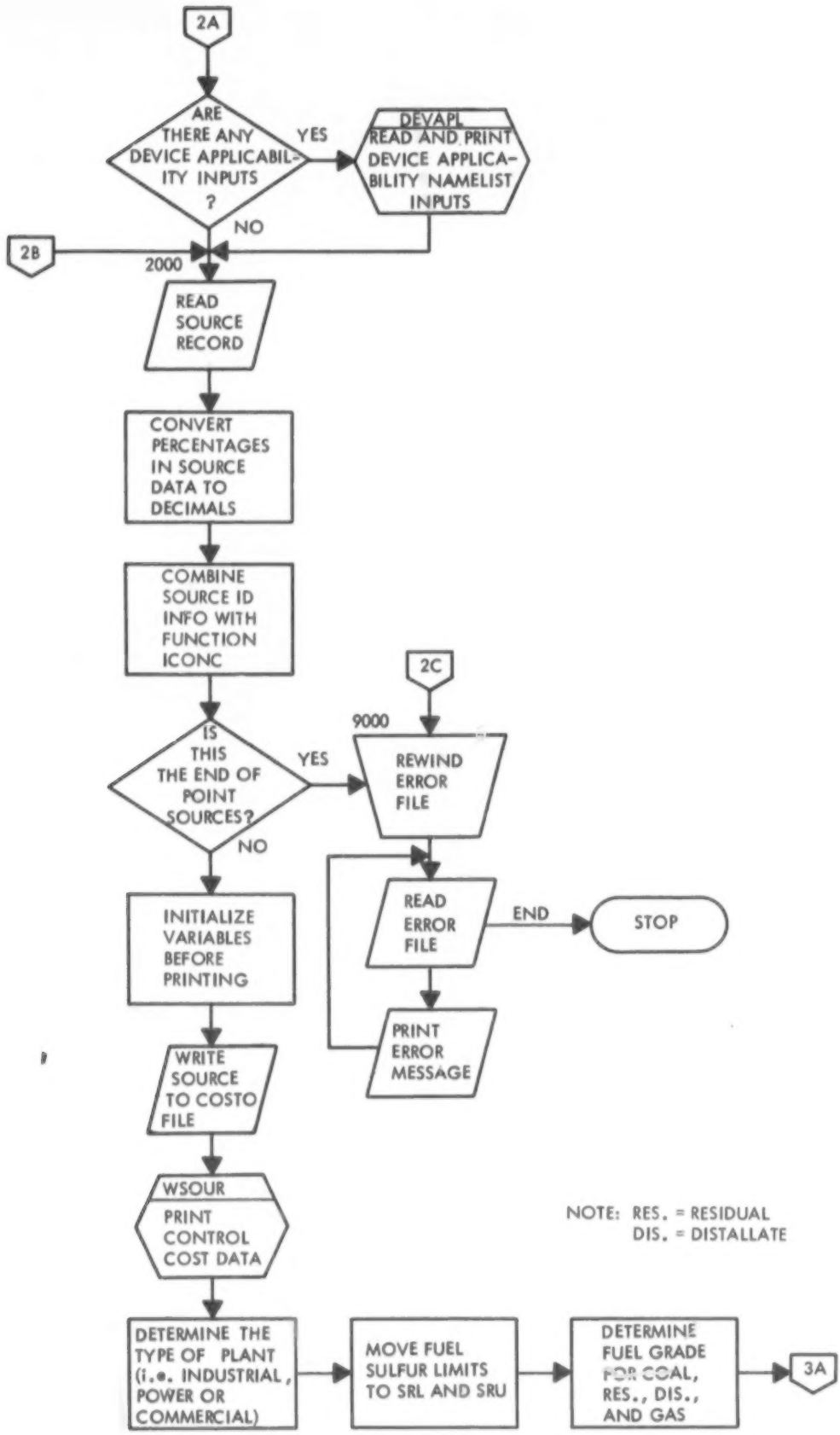
IREGS	Region number
ISIC	SIC number
ISIT	SITE number
IPRC	Process code
DESCRS	Descriptive name
XLOCN	X Location
YLOCN	Y Location
POLJUR	Political jurisdiction
OWNERS	Ownership
EMRAT	SO_2 and particulate emission
XOHRS	Operating hours
SHIFTS	Operating schedule
CONEFF	Existing control efficneicy for SO_2 and particulate
ICDE	Existing device number
GENCAP RATCAP	Rated capacity

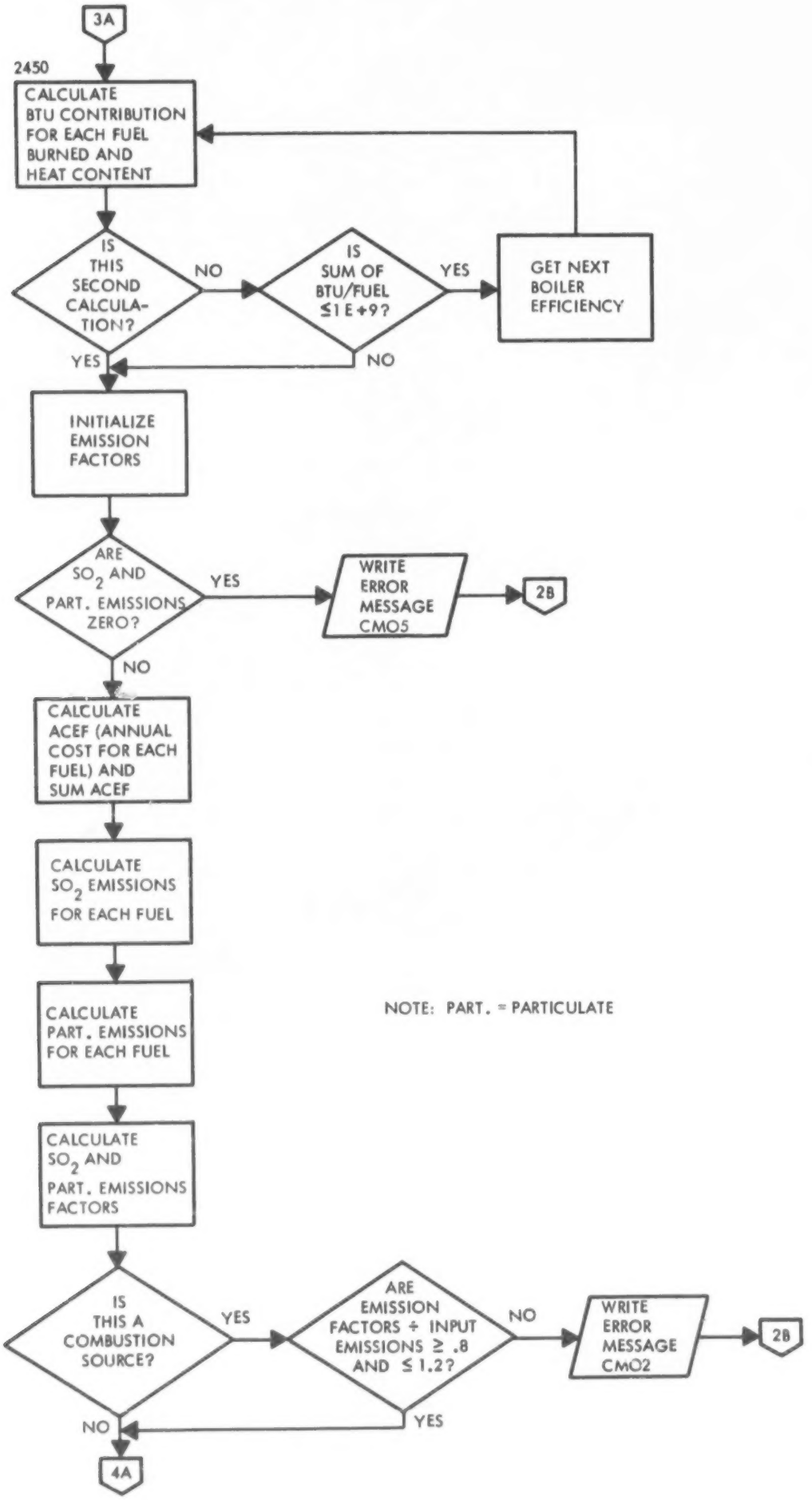
OFHC	Heat content for coal, residual and distillate oil and gas
OFSC	Sulfur content for coal, residual and distillate, oil and gas
OFAC	Ash content for coal
STKHT	Stack height
EXITTM	Exit temperature
PLUME	Normalized plume rise
PRCRTM	Maximum process rate
ACFM	Exhaust gas volume
STKDIA	Stack diameter
EXVEL	Eixt velocity
OUSEF	Use factor

CONTROL COST OVERLAY STRUCTURE

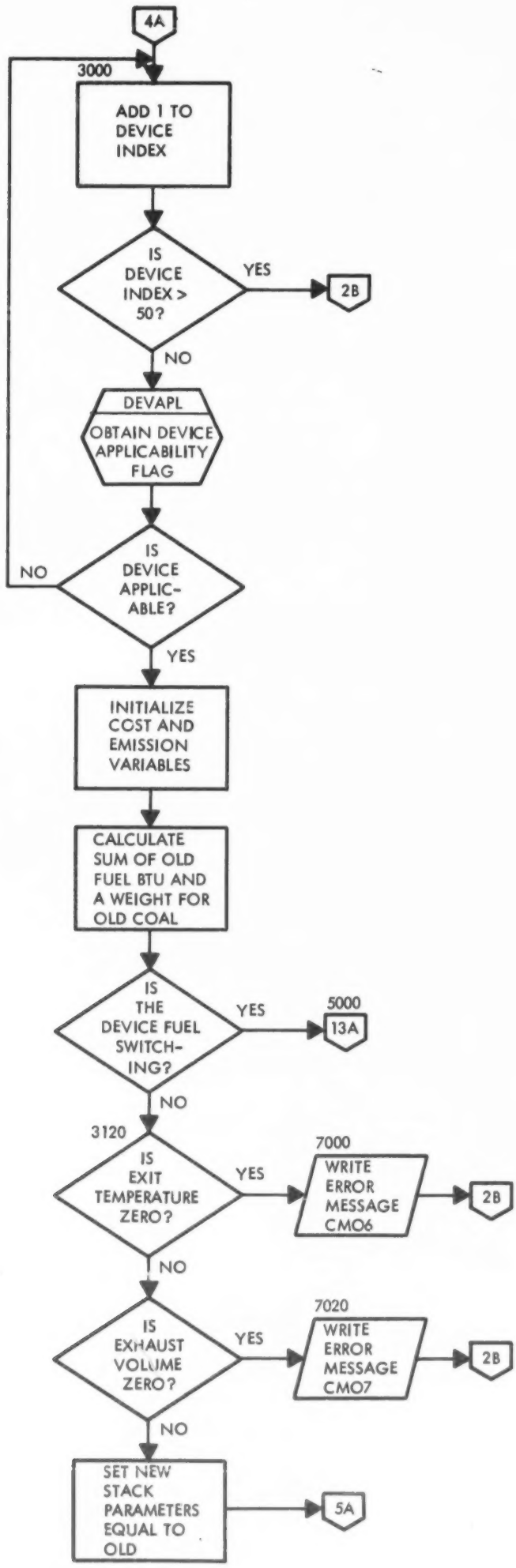


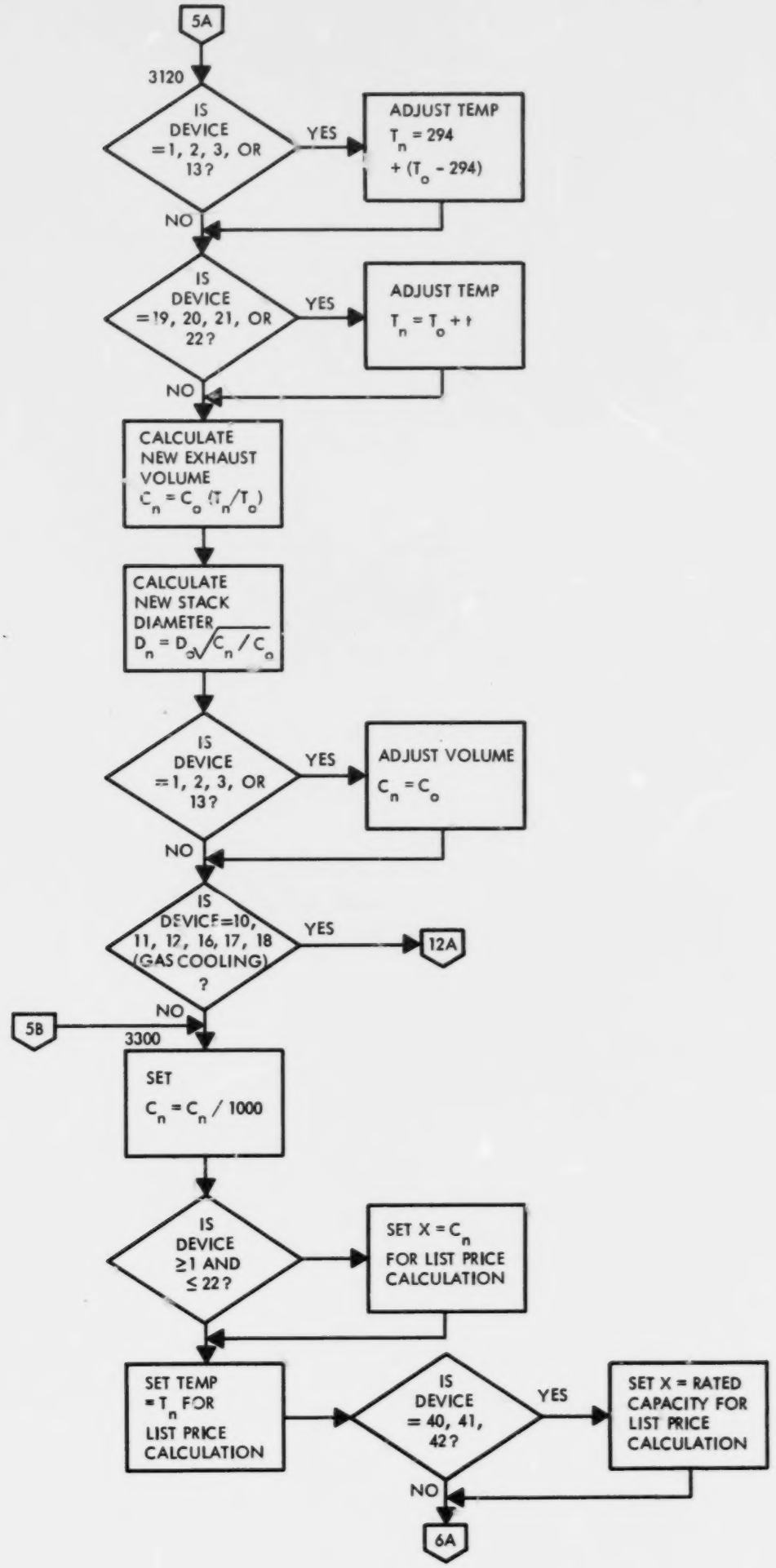

START
REWIND ERROR FILE, COSTO FILE, AND SOURCE FILE
READ SOURCE DATE AND RUN DATE
WRITE RUN DATE TO ERROR AND COSTO FILE
READ REGION NAMELIST
PRINT HEADING FOR PRINT-ED OUTPUT
WREGR
PRINT NAMELIST REGION DATA
CONVERT PERCENTAGES IN REGION DATA TO DECIMALS
ARE THERE ANY DEVICE INPUTS?
YES
READ DEVICE NAMELIST DATA
NO
CONVERT PERCENTAGES IN DEVICE DATA TO DECIMALS
WDEVR
PRINT ALL DEVICE DATA (PRESET AND NAMELIST)
2A

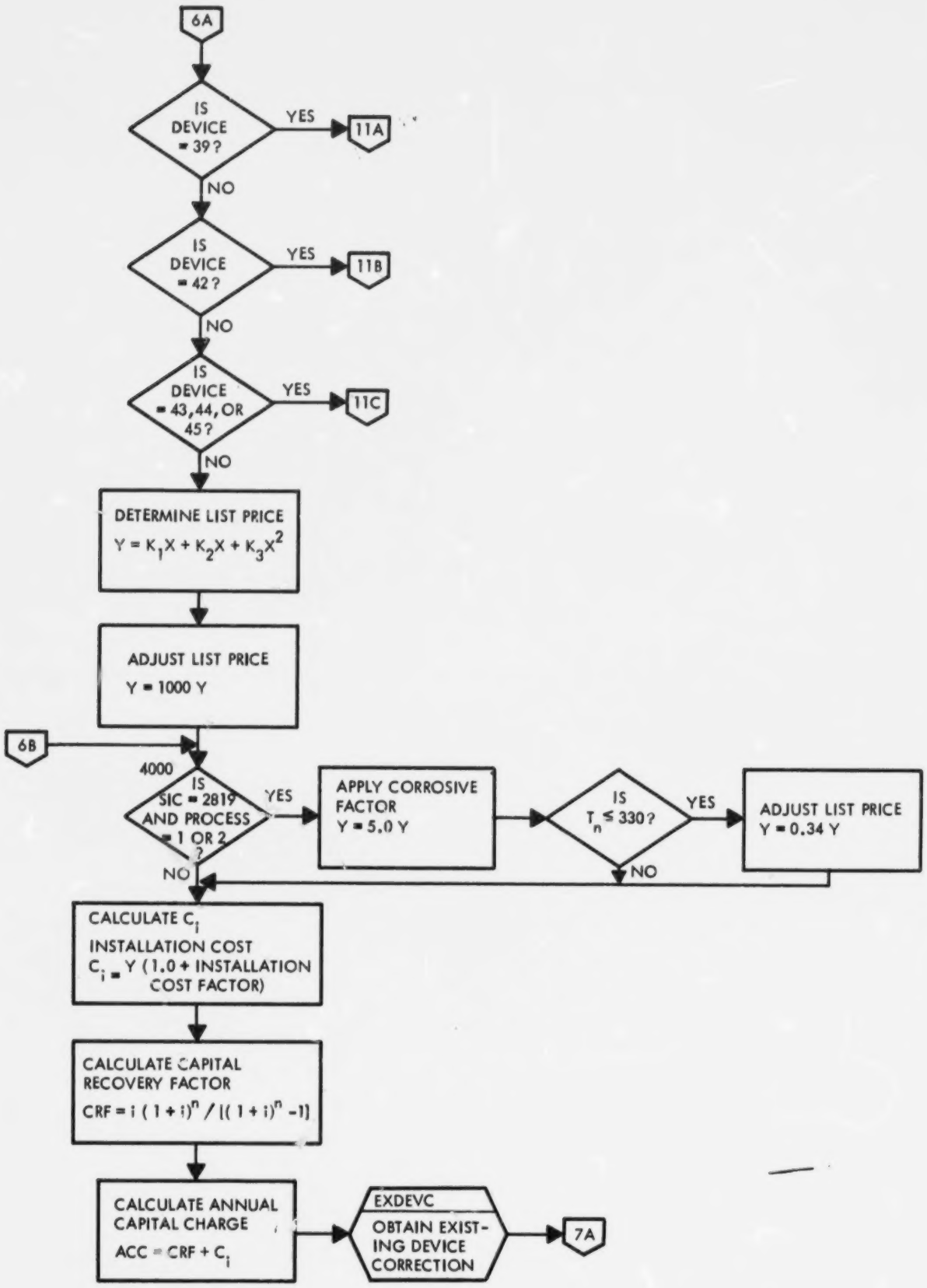

2A
ARE THERE ANY DEVICE APPLICABILITY INPUTS ?
YES
DEVAPL
READ AND PRINT DEVICE APPLICABILITY NAMELIST INPUTS
NO
2B
2000
READ SOURCE RECORD
CONVERT PERCENTAGES IN SOURCE DATA TO DECIMALS
COMBINE SOURCE ID INFO WITH FUNCTION ICONC
2C
9000
IS THIS THE END OF POINT SOURCES?
YES
REWIND ERROR FILE
NO
READ ERROR FILE
END
STOP
INITIALIZE VARIABLES BEFORE PRINTING
PRINT ERROR MESSAGE
WRITE SOURCE TO COSTO FILE
WSOUR
PRINT CONTROL COST DATA
NOTE: RES. = RESIDUAL
DIS. = DISTALLATE
DETERMINE THE TYPE OF PLANT (i.e. INDUSTRIAL, POWER OR COMMERCIAL)
MOVE FUEL SULFUR LIMITS TO SRL AND SRU
DETERMINE FUEL GRADE FOR COAL, RES., DIS., AND GAS
3A

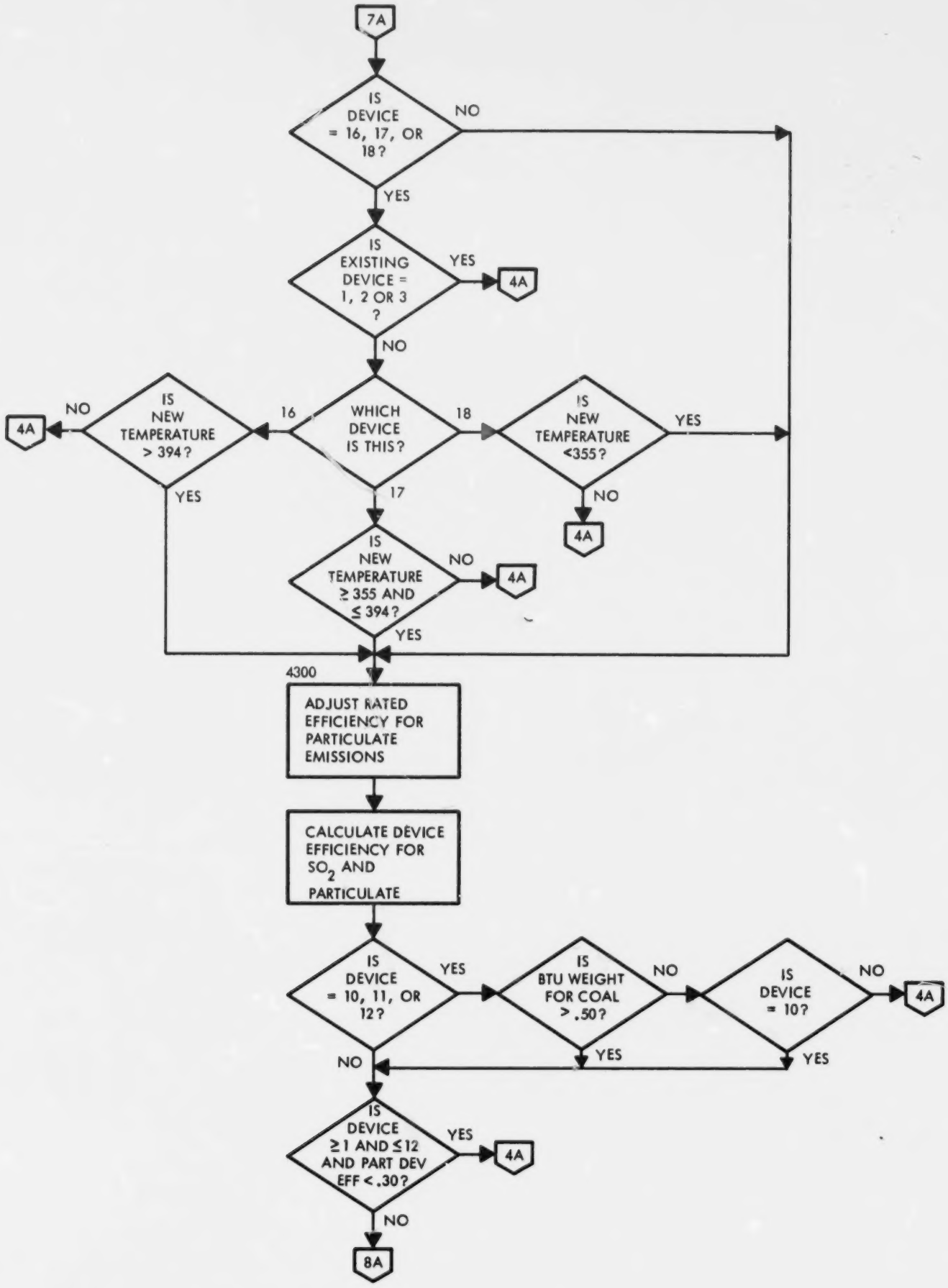


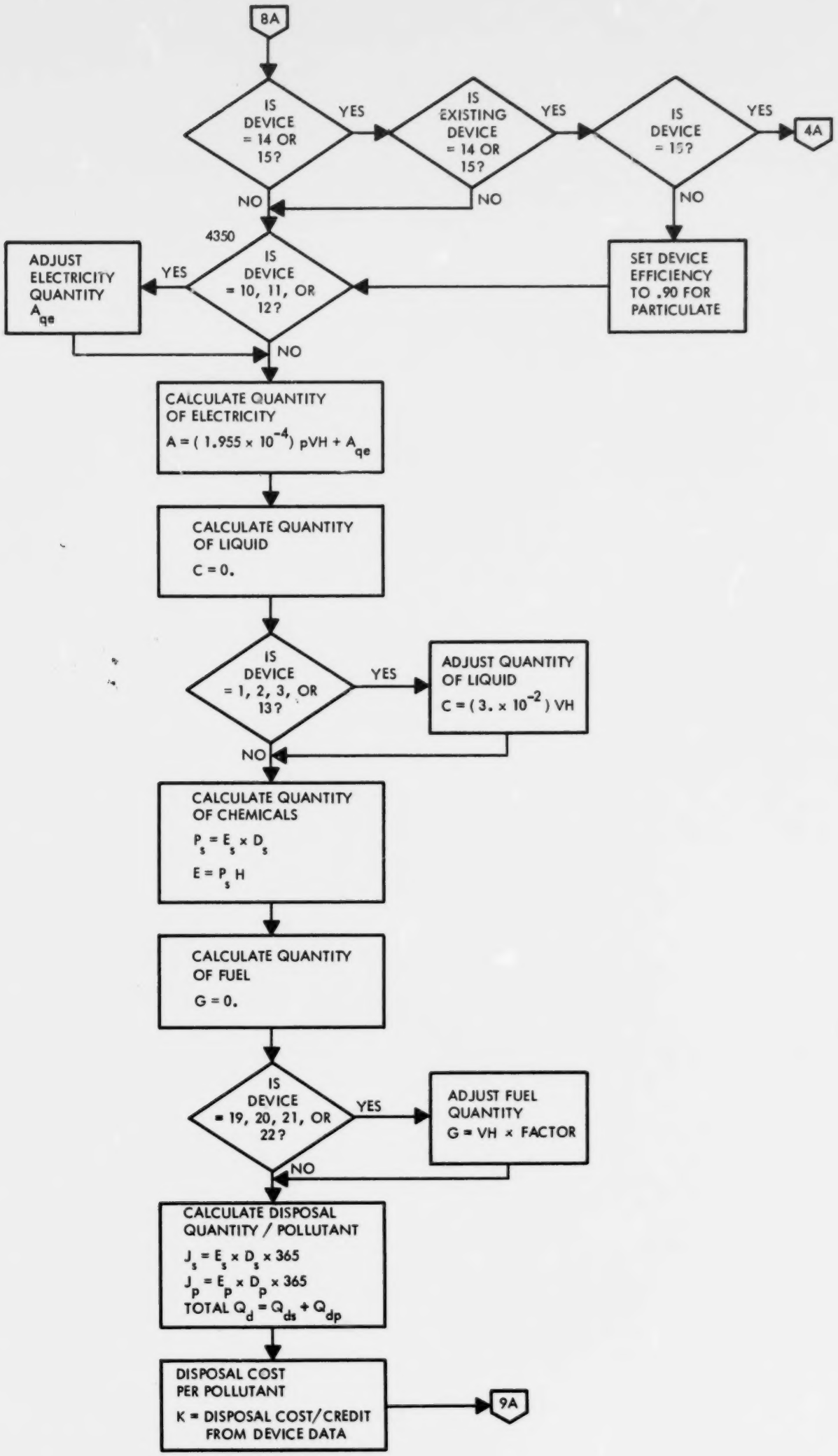
NOTE: PART. = PARTICULATE

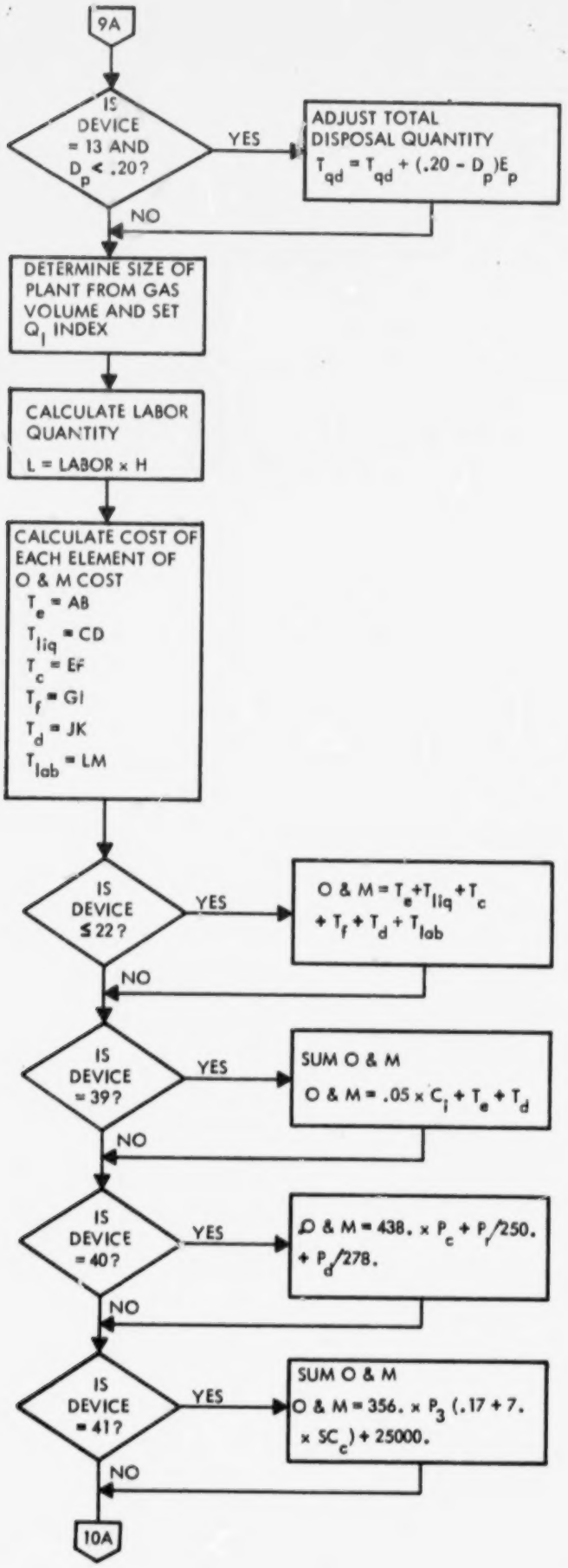

4A
3000
ADD 1 TO DEVICE INDEX
IS DEVICE INDEX > 50?
YES
2B
NO
DEVAPL
OBTAIN DEVICE APPLICABILITY FLAG
IS DEVICE APPLIC-ABLE?
NO
YES
INITIALIZE COST AND EMISSION VARIABLES
CALCULATE SUM OF OLD FUEL BTU AND A WEIGHT FOR OLD COAL
IS THE DEVICE FUEL SWITCH-ING?
YES
5000
13A
NO
3120
IS EXIT TEMPERATURE ZERO?
YES
7000
WRITE ERROR MESSAGE CM06
2B
NO
IS EXHAUST VOLUME ZERO?
YES
7020
WRITE ERROR MESSAGE CM07
2B
NO
SET NEW STACK PARAMETERS EQUAL TO OLD
5A

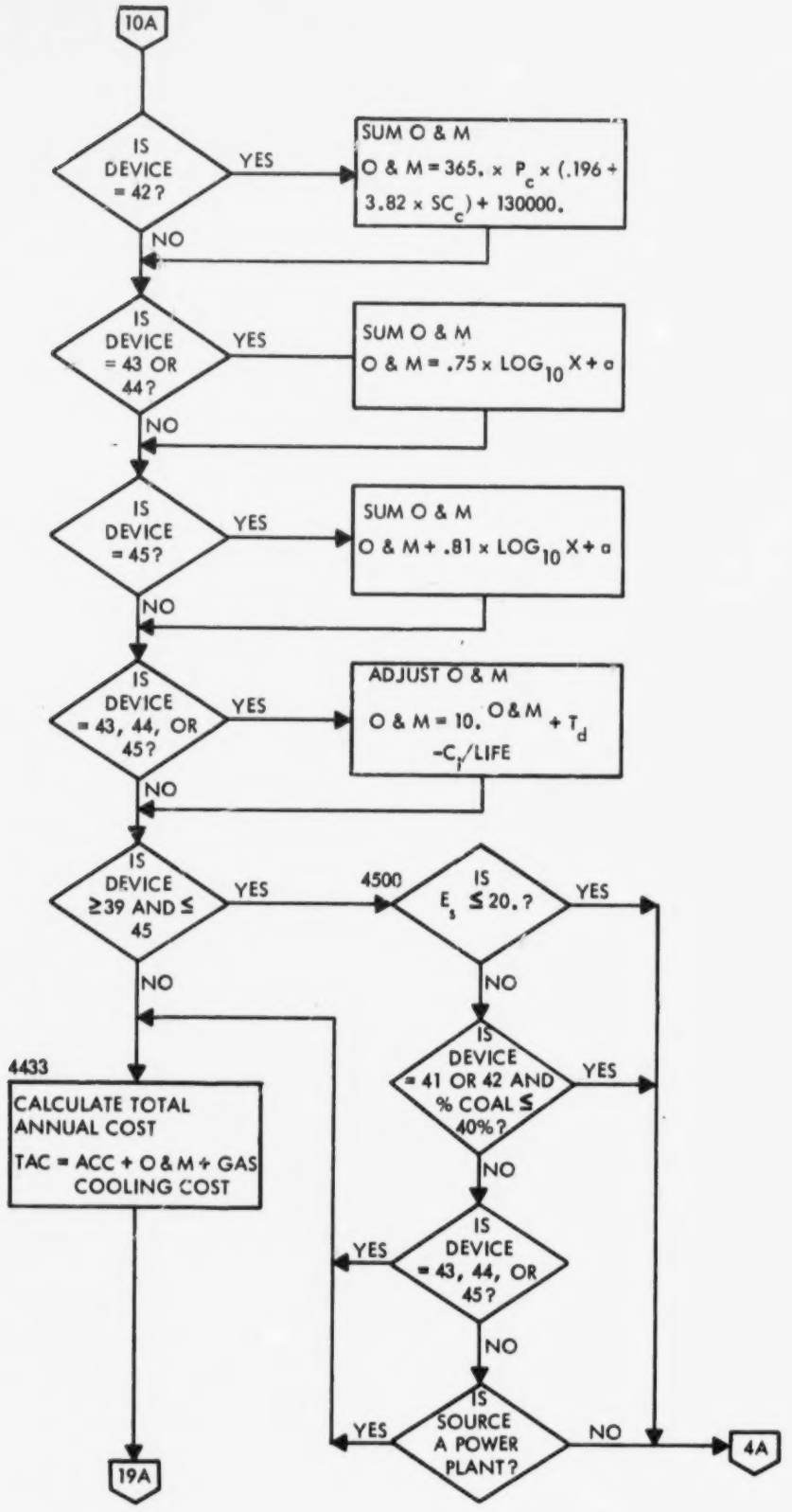

5A
3120
IS DEVICE =1, 2, 3, OR 13?
YES
ADJUST TEMP
$T_n = 294 + (T_o - 294)$
NO
IS DEVICE =19, 20, 21, OR 22?
YES
ADJUST TEMP
$T_n = T_o + t$
NO
CALCULATE NEW EXHAUST VOLUME
$C_n = C_o (T_n / T_o)$
CALCULATE NEW STACK DIAMETER
$D_n = D_o \sqrt{C_n / C_o}$
IS DEVICE =1, 2, 3, OR 13?
YES
ADJUST VOLUME
$C_n = C_o$
NO
IS DEVICE=10, 11, 12, 16, 17, 18 (GAS COOLING) ?
YES
12A
NO
5B
3300
SET
$C_n = C_n / 1000$
IS DEVICE ≥1 AND ≤22?
SET X = C_n FOR LIST PRICE CALCULATION
SET TEMP = T_n FOR LIST PRICE CALCULATION
IS DEVICE = 40, 41, 42?
YES
SET X = RATED CAPACITY FOR LIST PRICE CALCULATION
NO
6A

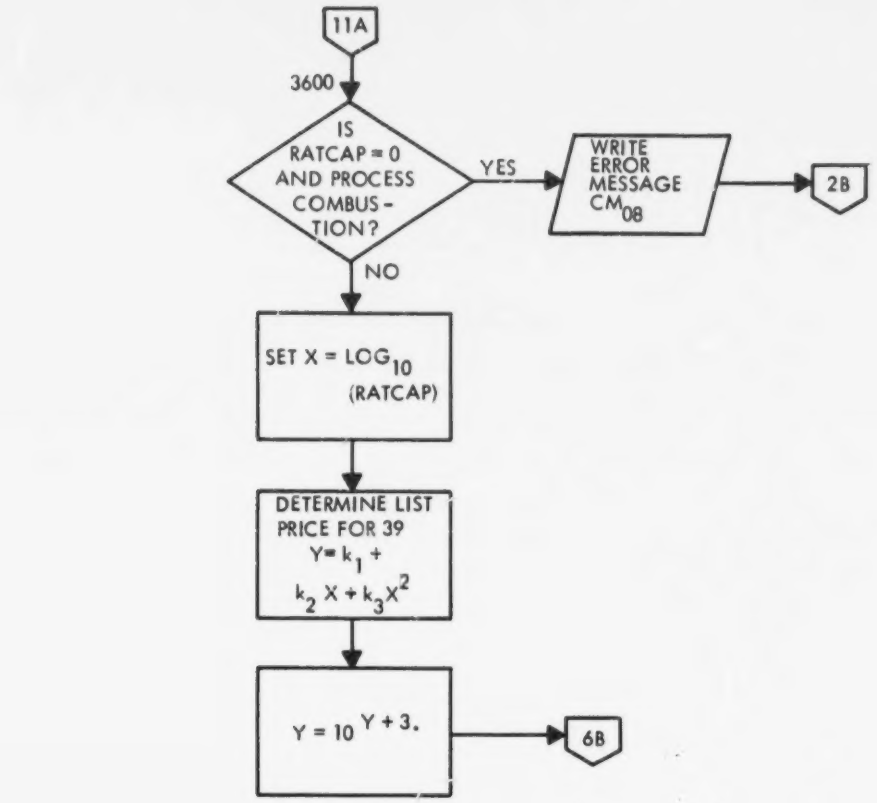

6A
IS DEVICE = 39?
YES
11A
NO
IS DEVICE = 42?
YES
11B
NO
IS DEVICE = 43,44, OR 45?
YES
11C
NO
DETERMINE LIST PRICE
$Y = K_1X + K_2X + K_3X^2$
ADJUST LIST PRICE
Y = 1000 Y
6B
4000
IS SIC = 2819 AND PROCESS = 1 OR 2 ?
YES
APPLY CORROSIVE FACTOR
Y = 5.0 Y
IS $T_n \leq 330$?
YES
ADJUST LIST PRICE
Y = 0.34 Y
NO
NO
CALCULATE C_i
INSTALLATION COST
C_i = Y (1.0 + INSTALLATION COST FACTOR)
CALCULATE CAPITAL RECOVERY FACTOR
$CRF = i(1+i)^n / [(1+i)^n - 1]$
CALCULATE ANNUAL CAPITAL CHARGE
ACC = CRF + C_i
EXDEVC
OBTAIN EXISTING DEVICE CORRECTION
7A

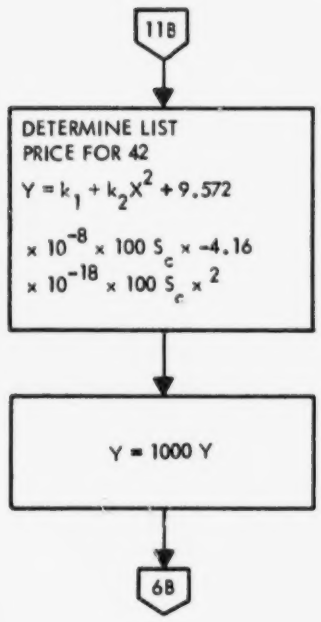

7A
IS DEVICE = 16, 17, OR 18?
NO
YES
IS EXISTING DEVICE = 1, 2 OR 3 ?
YES
4A
NO
WHICH DEVICE IS THIS?
16
IS NEW TEMPERATURE > 394?
NO
4A
YES
17
IS NEW TEMPERATURE ≥ 355 AND ≤ 394?
NO
4A
YES
18
IS NEW TEMPERATURE <355?
YES
NO
4A
4300
ADJUST RATED EFFICIENCY FOR PARTICULATE EMISSIONS
CALCULATE DEVICE EFFICIENCY FOR SO_2 AND PARTICULATE
IS DEVICE = 10, 11, OR 12?
YES
IS BTU WEIGHT FOR COAL > .50?
NO
IS DEVICE = 10?
NO
4A
YES
YES
NO
IS DEVICE ≥ 1 AND ≤ 12 AND PART DEV EFF < .30?
YES
4A
NO
8A

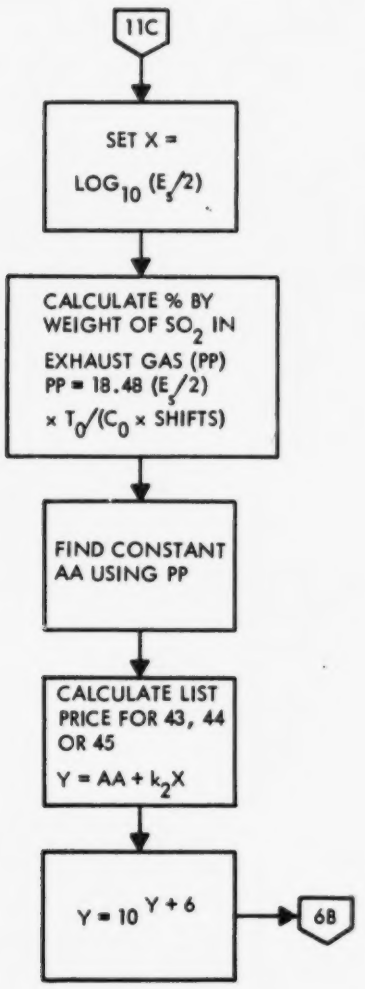

8A
IS DEVICE = 14 OR 15?
YES
IS EXISTING DEVICE = 14 OR 15?
YES
IS DEVICE = 15?
YES
4A
NO
NO
NO
4350
IS DEVICE = 10, 11, OR 12?
YES
ADJUST ELECTRICITY QUANTITY A_{qe}
SET DEVICE EFFICIENCY TO .90 FOR PARTICULATE
NO
CALCULATE QUANTITY OF ELECTRICITY
$A = (1.955 \times 10^{-4})\ pVH + A_{qe}$
CALCULATE QUANTITY OF LIQUID
C = 0.
IS DEVICE = 1, 2, 3, OR 13?
YES
ADJUST QUANTITY OF LIQUID
$C = (3. \times 10^{-2})\ VH$
NO
CALCULATE QUANTITY OF CHEMICALS
$P_s = E_s \times D_s$
$E = P_s H$
CALCULATE QUANTITY OF FUEL
G = 0.
IS DEVICE = 19, 20, 21, OR 22?
YES
ADJUST FUEL QUANTITY
G = VH x FACTOR
NO
CALCULATE DISPOSAL QUANTITY / POLLUTANT
$J_s = E_s \times D_s \times 365$
$J_p = E_p \times D_p \times 365$
TOTAL $Q_d = Q_{ds} + Q_{dp}$
DISPOSAL COST PER POLLUTANT
K = DISPOSAL COST/CREDIT FROM DEVICE DATA
9A

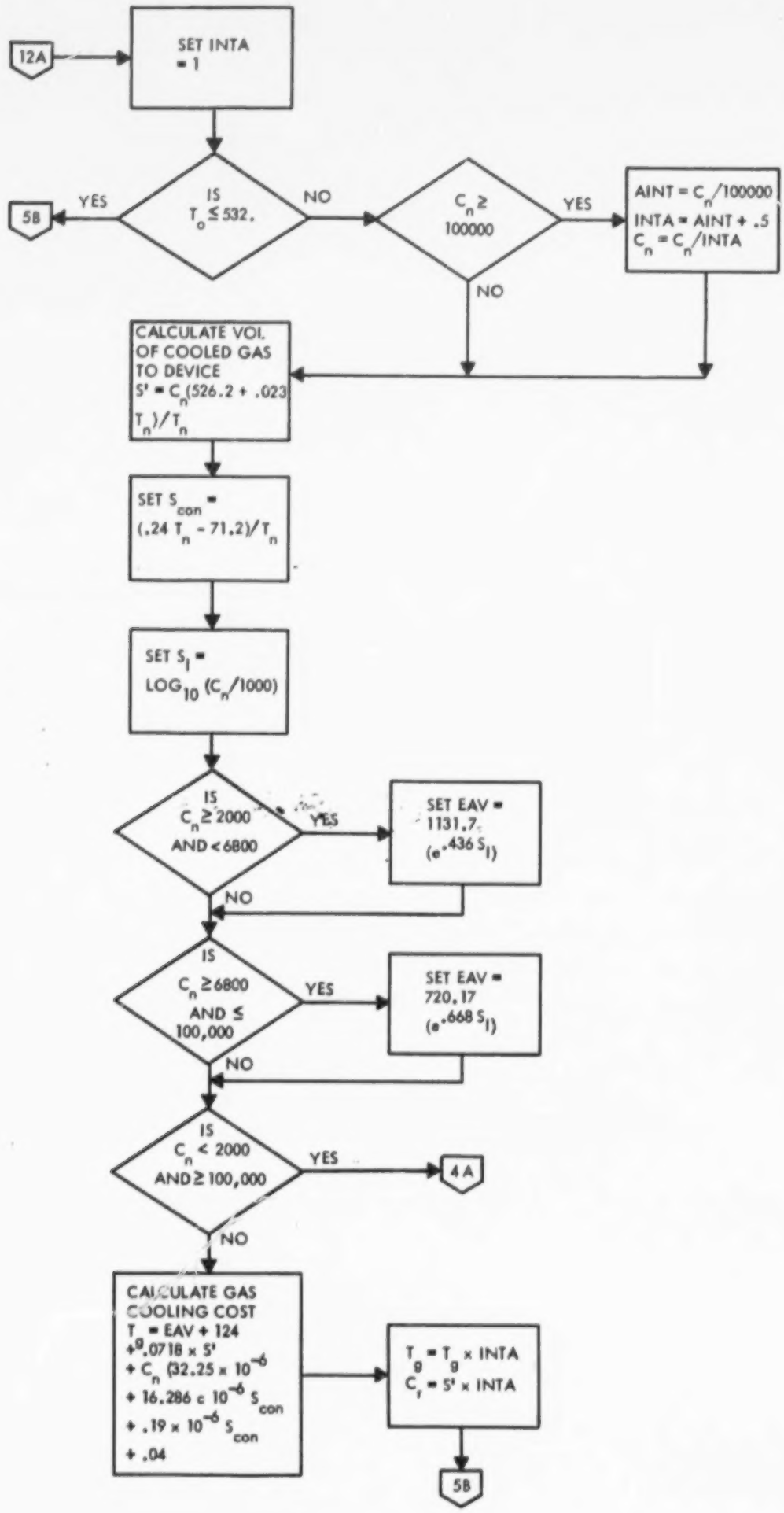

9A
IS DEVICE = 13 AND D_p < .20?
YES
ADJUST TOTAL DISPOSAL QUANTITY
$T_{qd} = T_{qd} + (.20 - D_p)E_p$
NO
DETERMINE SIZE OF PLANT FROM GAS VOLUME AND SET Q_1 INDEX
CALCULATE LABOR QUANTITY
L = LABOR x H
CALCULATE COST OF EACH ELEMENT OF O & M COST
T_e = AB
T_{liq} = CD
T_c = EF
T_f = GI
T_d = JK
T_{lab} = LM
IS DEVICE ≤ 22?
YES
O & M = T_e+T_{liq}+T_c + T_f + T_d + T_{lab}
NO
IS DEVICE = 39?
YES
SUM O & M
O & M = .05 x C_i + T_e + T_d
NO
IS DEVICE = 40?
YES
O & M = 438. x P_c + P_f/250. + P_d/278.
NO
IS DEVICE = 41?
YES
SUM O & M
O & M = 356. x P_3 (.17 + 7. x SC_c) + 25000.
NO
10A

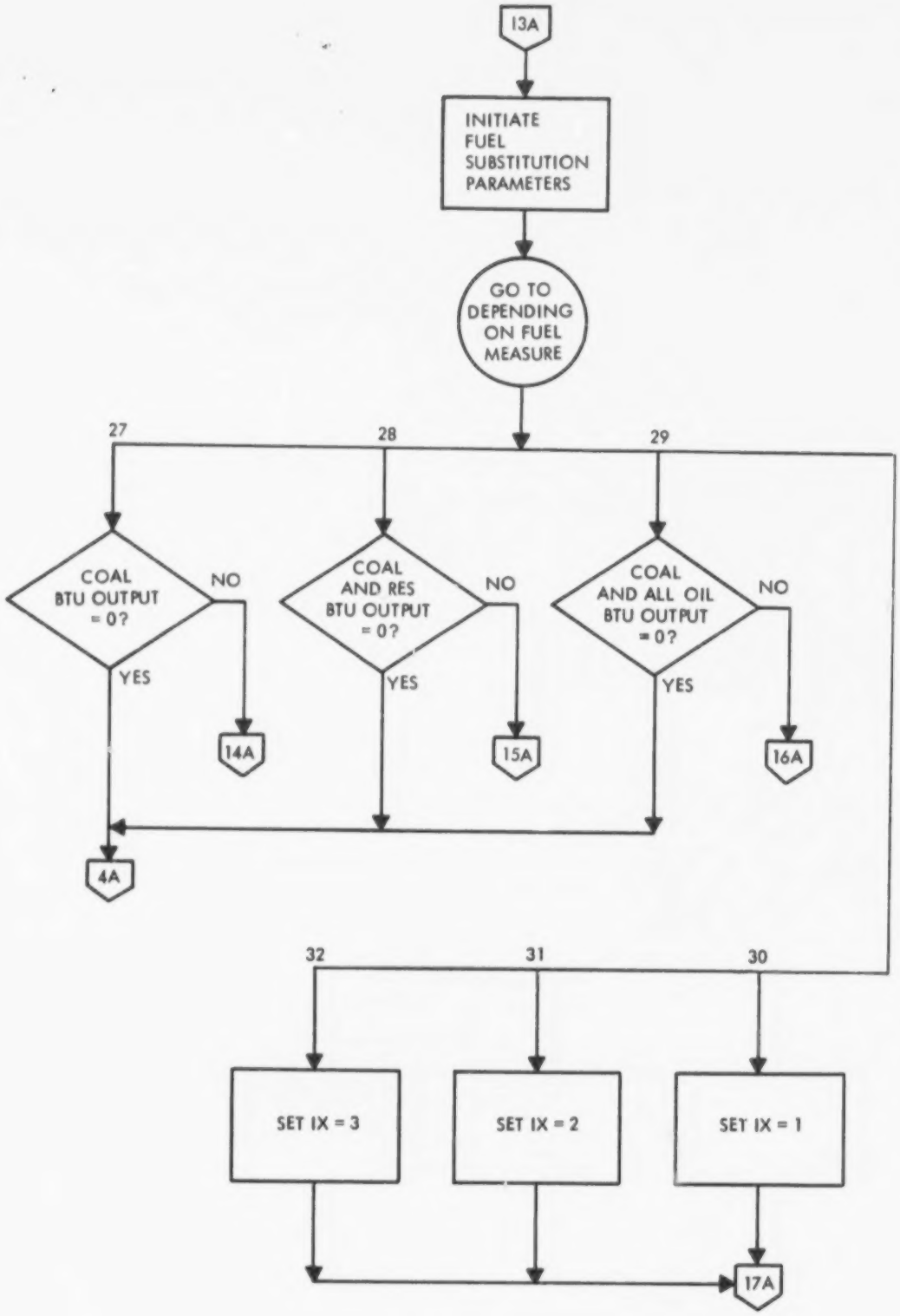

10A
IS DEVICE = 42?
YES
SUM O & M
O & M = 365. x P_c x (.196 + 3.82 x SC_c) + 130000.
NO
IS DEVICE = 43 OR 44?
YES
SUM O & M
O & M = .75 x LOG_{10} X + a
NO
IS DEVICE = 45?
YES
SUM O & M
O & M + .81 x LOG_{10} X + a
NO
IS DEVICE = 43, 44, OR 45?
YES
ADJUST O & M
O & M = 10. $^{O\&M}$ + T_d $-C_f$/LIFE
NO
IS DEVICE ≥39 AND ≤ 45
YES
4500
IS E_s ≤ 20.?
YES
NO
IS DEVICE = 41 OR 42 AND % COAL ≤ 40%?
YES
NO
IS DEVICE = 43, 44, OR 45?
YES
NO
IS SOURCE A POWER PLANT?
YES
NO
4A
4433
CALCULATE TOTAL ANNUAL COST
TAC = ACC + O & M + GAS COOLING COST
19A

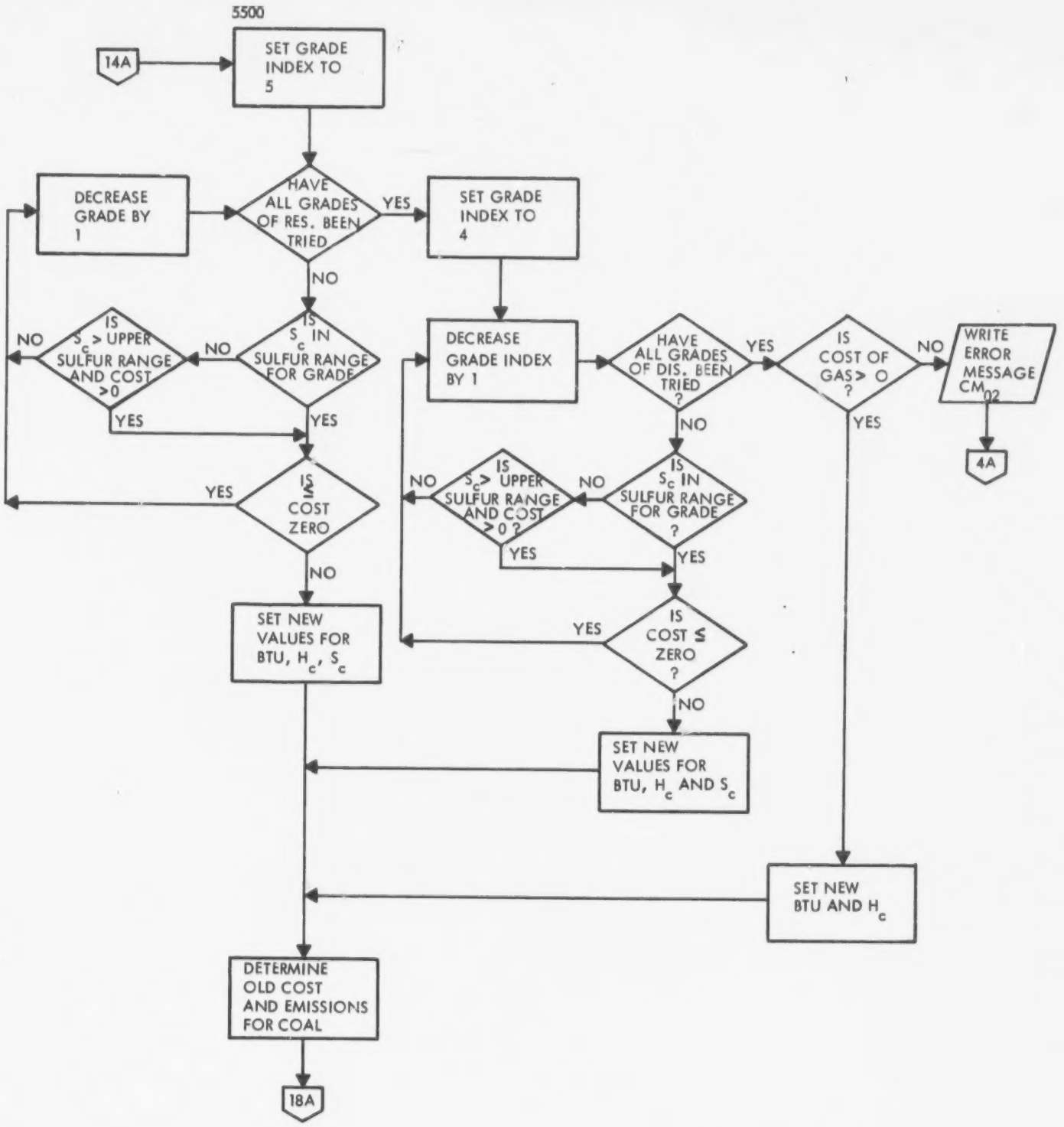

11A
3600
IS RATCAP = 0 AND PROCESS COMBUS-TION?
YES
WRITE ERROR MESSAGE CM08
2B
NO
SET X = LOG10 (RATCAP)
DETERMINE LIST PRICE FOR 39
Y = k1 + k2 X + k3X2
Y = 10 Y + 3.
6B

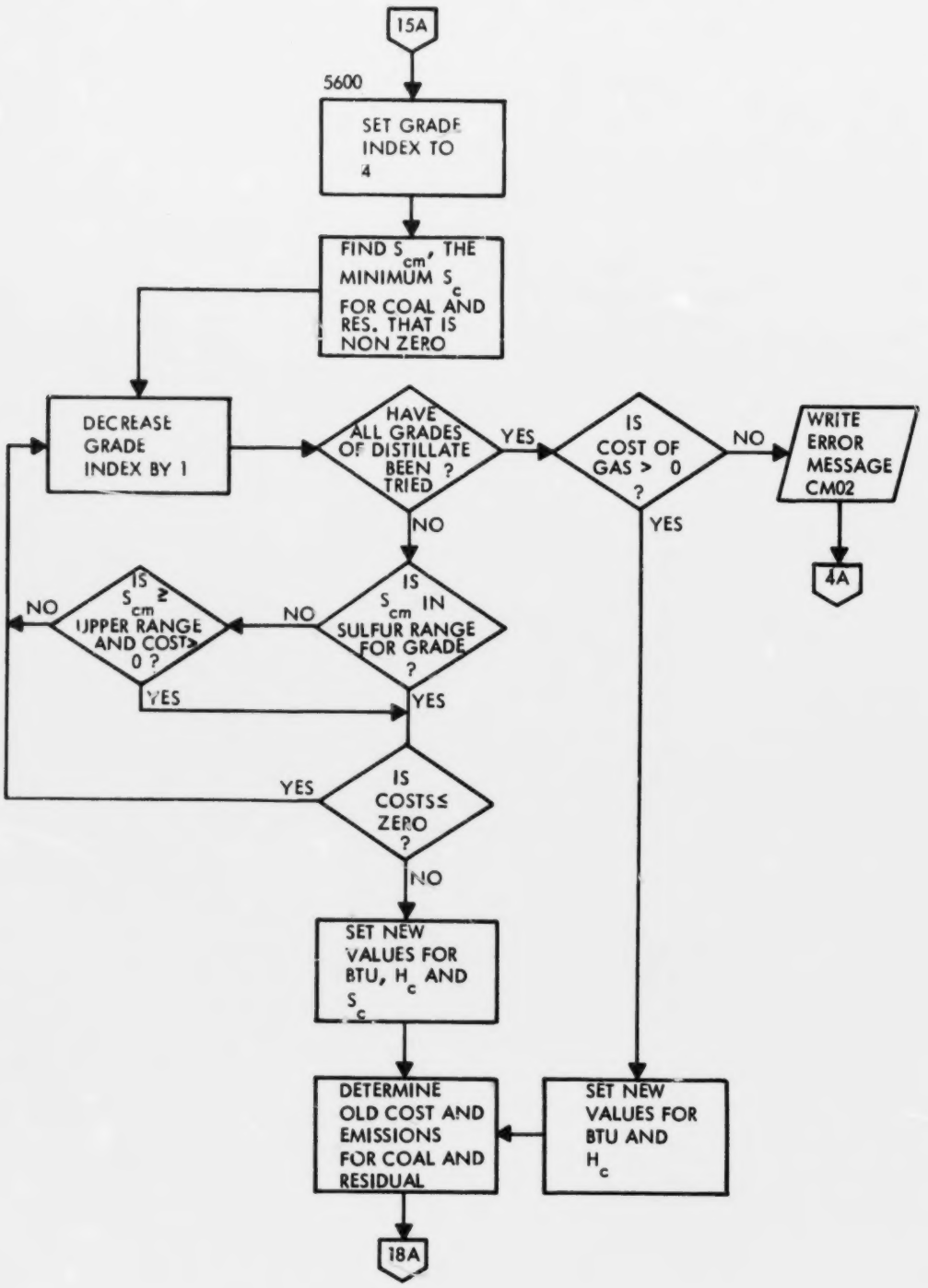

11B
DETERMINE LIST PRICE FOR 42
Y = k1 + k2X2 + 9.572
× 10-8 × 100 Sc × -4.16
× 10-18 × 100 Sc × 2
Y = 1000 Y
6B

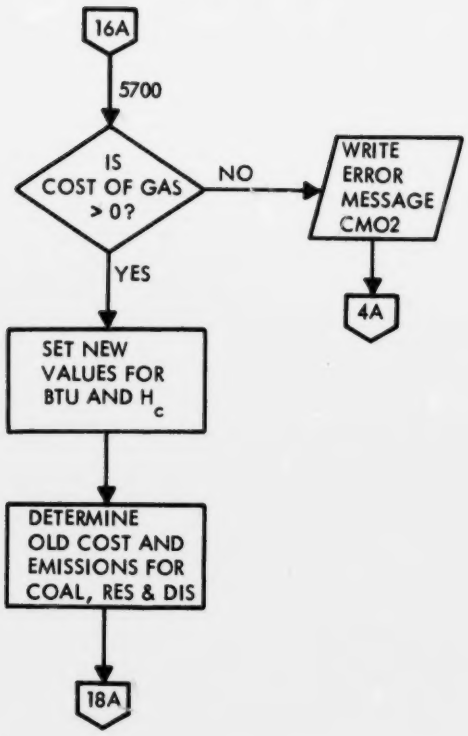

11C
SET X = LOG10 (Es/2)
CALCULATE % BY WEIGHT OF SO2 IN EXHAUST GAS (PP)
PP = 18.48 (Es/2)
× T0/(C0 × SHIFTS)
FIND CONSTANT AA USING PP
CALCULATE LIST PRICE FOR 43, 44 OR 45
Y = AA + k2X
Y = 10 Y + 6
6B

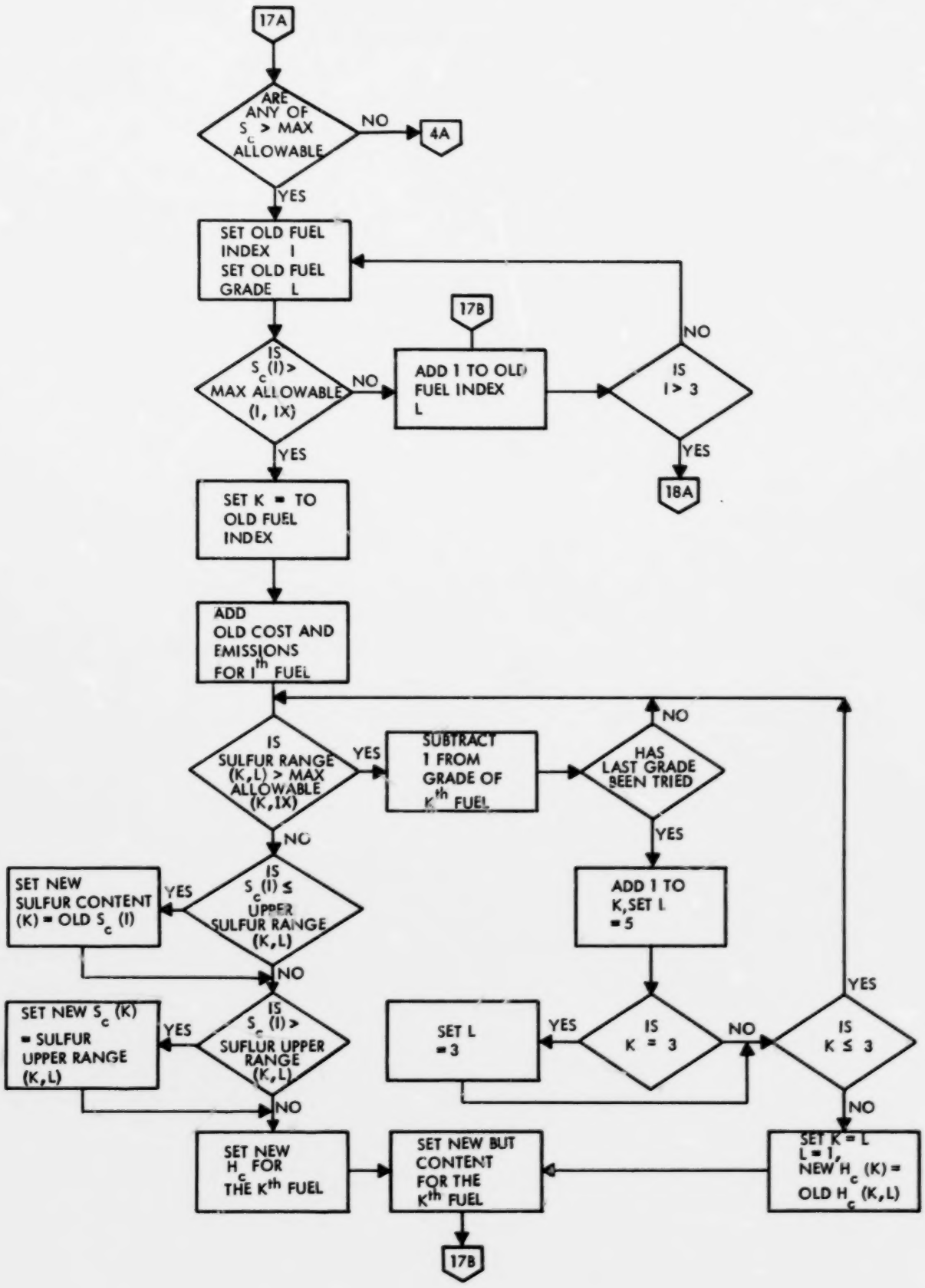

12A
SET INTA = 1
IS $T_o \leq 532.$
YES
5B
NO
$C_n \geq 100000$
YES
AINT = $C_n/100000$
INTA = AINT + .5
$C_n = C_n/INTA$
NO
CALCULATE VOL. OF COOLED GAS TO DEVICE
$S' = C_n(526.2 + .023 T_n)/T_n$
SET S_{con} = $(.24 T_n - 71.2)/T_n$
SET S_l = $LOG_{10} (C_n/1000)$
IS $C_n \geq 2000$ AND < 6800
YES
SET EAV = 1131.7 $(e^{.436 S_l})$
NO
IS $C_n \geq 6800$ AND $\leq$ 100,000
YES
SET EAV = 720.17 $(e^{.668 S_l})$
NO
IS $C_n < 2000$ AND $\geq$ 100,000
YES
4A
NO
CALCULATE GAS COOLING COST
$T_g = EAV + 124 + .0718 \times S' + C_n (32.25 \times 10^{-6} + 16.286 \times 10^{-6} S_{con} + .19 \times 10^{-6} S_{con} + .04$
$T_g = T_g \times INTA$
$C_r = S' \times INTA$
5B

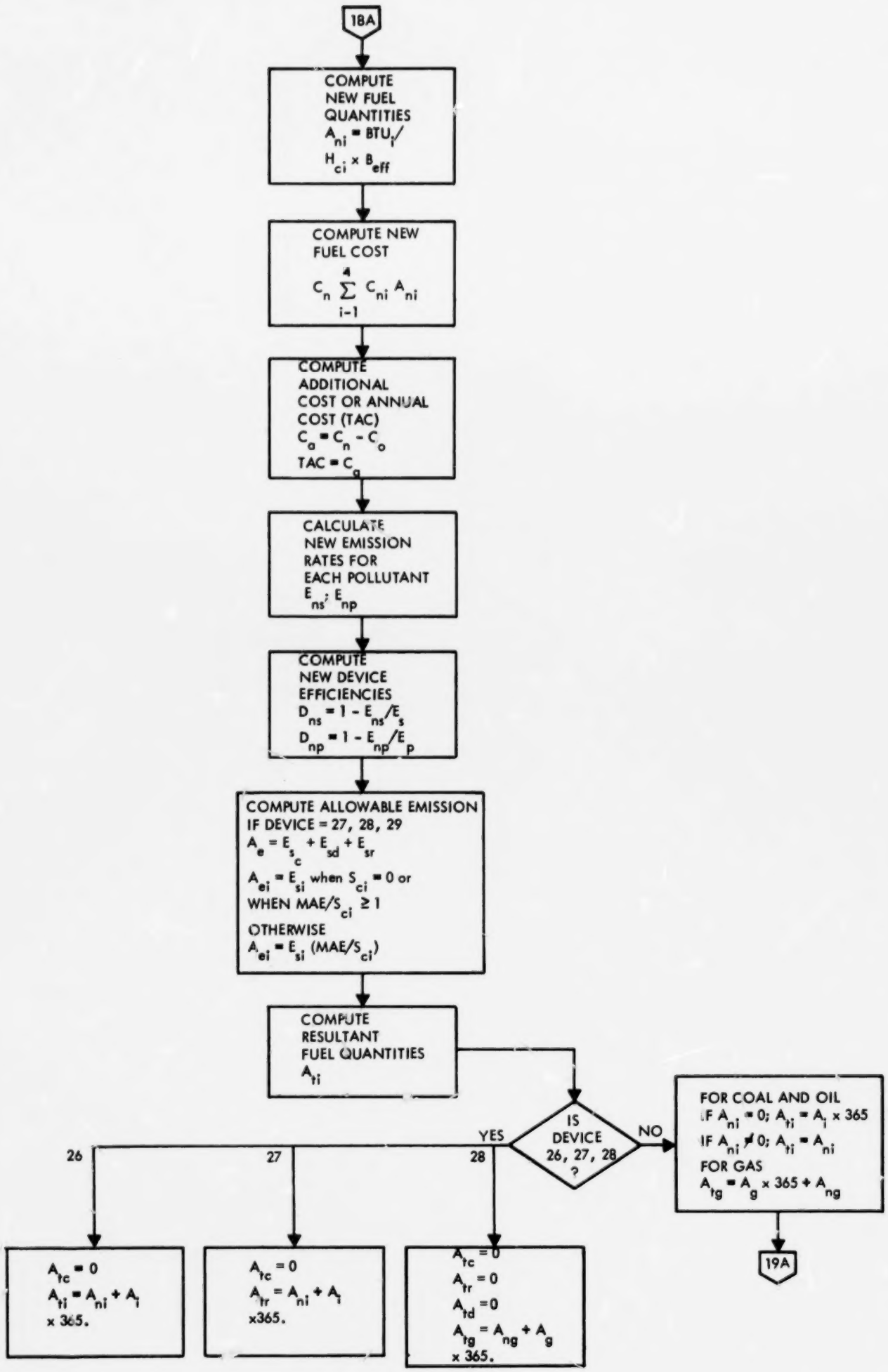

13A
INITIATE FUEL SUBSTITUTION PARAMETERS
GO TO DEPENDING ON FUEL MEASURE
27
28
29
COAL BTU OUTPUT = 0?
NO
YES
14A
COAL AND RES BTU OUTPUT = 0?
NO
YES
15A
COAL AND ALL OIL BTU OUTPUT = 0?
NO
YES
16A
4A
32
31
30
SET IX = 3
SET IX = 2
SET IX = 1
17A

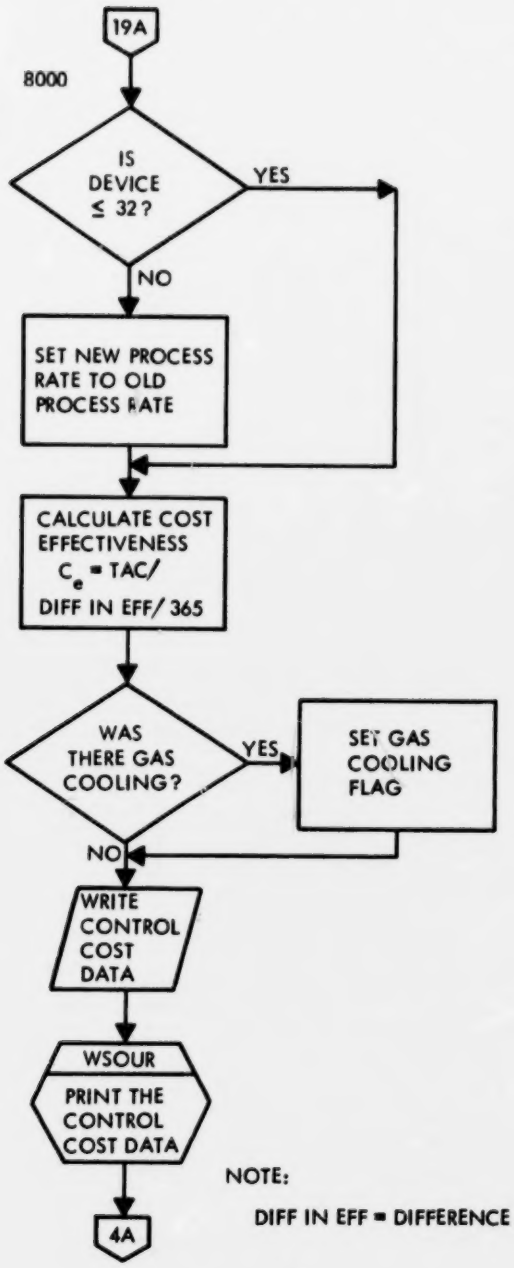

5500
14A
SET GRADE INDEX TO 5
DECREASE GRADE BY 1
HAVE ALL GRADES OF RES. BEEN TRIED
YES
SET GRADE INDEX TO 4
NO
IS S_c > UPPER SULFUR RANGE AND COST >0
NO
IS S_c IN SULFUR RANGE FOR GRADE
YES
YES
IS ≤ COST ZERO
YES
NO
SET NEW VALUES FOR BTU, H_c, S_c
DECREASE GRADE INDEX BY 1
HAVE ALL GRADES OF DIS. BEEN TRIED ?
YES
IS COST OF GAS > 0 ?
NO
WRITE ERROR MESSAGE CM02
4A
NO
IS S_c > UPPER SULFUR RANGE AND COST > 0 ?
NO
IS S_c IN SULFUR RANGE FOR GRADE ?
YES
YES
IS COST ≤ ZERO ?
YES
NO
SET NEW VALUES FOR BTU, H_c AND S_c
YES
SET NEW BTU AND H_c
DETERMINE OLD COST AND EMISSIONS FOR COAL
18A


15A
5600
SET GRADE INDEX TO 4
FIND S_{cm}, THE MINIMUM S_c FOR COAL AND RES. THAT IS NON ZERO
DECREASE GRADE INDEX BY 1
HAVE ALL GRADES OF DISTILLATE BEEN TRIED ?
YES
IS COST OF GAS > 0 ?
NO
WRITE ERROR MESSAGE CM02
4A
YES
NO
IS S_{cm} IN SULFUR RANGE FOR GRADE ?
NO
IS $S_{cm} \geq$ UPPER RANGE AND COST > 0 ?
NO
YES
YES
IS COSTS ≤ ZERO ?
YES
NO
SET NEW VALUES FOR BTU, H_c AND S_c
SET NEW VALUES FOR BTU AND H_c
DETERMINE OLD COST AND EMISSIONS FOR COAL AND RESIDUAL
18A


16A
5700
IS COST OF GAS > 0?
NO
WRITE ERROR MESSAGE CMO2
4A
YES
SET NEW VALUES FOR BTU AND H_c
DETERMINE OLD COST AND EMISSIONS FOR COAL, RES & DIS
18A


17A
ARE ANY OF S_c > MAX ALLOWABLE
NO
4A
YES
SET OLD FUEL INDEX I
SET OLD FUEL GRADE L
17B
IS S_c(I)> MAX ALLOWABLE (I, IX)
NO
ADD 1 TO OLD FUEL INDEX L
IS I> 3
NO
YES
18A
YES
SET K = TO OLD FUEL INDEX
ADD OLD COST AND EMISSIONS FOR Ith FUEL
IS SULFUR RANGE (K,L) > MAX ALLOWABLE (K,IX)
YES
SUBTRACT 1 FROM GRADE OF Kth FUEL
HAS LAST GRADE BEEN TRIED
NO
YES
NO
SET NEW SULFUR CONTENT (K) = OLD S_c (I)
YES
IS S_c(I) ≤ UPPER SULFUR RANGE (K,L)
ADD 1 TO K, SET L = 5
NO
SET NEW S_c (K) = SULFUR UPPER RANGE (K,L)
YES
IS S_c (I) > SUFLUR UPPER RANGE (K,L)
SET L = 3
YES
IS K = 3
NO
IS K ≤ 3
YES
NO
NO
SET NEW H_c FOR THE Kth FUEL
SET NEW BUT CONTENT FOR THE Kth FUEL
SET K = L L = 1, NEW H_c (K) = OLD H_c (K,L)
17B


18A
COMPUTE NEW FUEL QUANTITIES
$A_{ni} = BTU_i / H_{ci} \times B_{eff}$
COMPUTE NEW FUEL COST
$C_n \sum_{i-1}^{4} C_{ni} A_{ni}$
COMPUTE ADDITIONAL COST OR ANNUAL COST (TAC)
$C_a = C_n - C_o$
$TAC = C_a$
CALCULATE NEW EMISSION RATES FOR EACH POLLUTANT
$E_{ns}; E_{np}$
COMPUTE NEW DEVICE EFFICIENCIES
$D_{ns} = 1 - E_{ns}/E_s$
$D_{np} = 1 - E_{np}/E_p$
COMPUTE ALLOWABLE EMISSION
IF DEVICE = 27, 28, 29
$A_e = E_{s_c} + E_{sd} + E_{sr}$
$A_{ei} = E_{si}$ when $S_{ci} = 0$ or
WHEN $MAE/S_{ci} \geq 1$
OTHERWISE
$A_{ei} = E_{si} (MAE/S_{ci})$
COMPUTE RESULTANT FUEL QUANTITIES
A_{ti}
IS DEVICE 26, 27, 28 ?
YES
NO
26
27
28
$A_{tc} = 0$
$A_{ti} = A_{ni} + A_i$
x 365.
$A_{tc} = 0$
$A_{tr} = A_{ni} + A_i$
x365.
$A_{tc} = 0$
$A_{tr} = 0$
$A_{td} = 0$
$A_{tg} = A_{ng} + A_g$
x 365.
FOR COAL AND OIL
IF $A_{ni} = 0$; $A_{ti} = A_i \times 365$
IF $A_{ni} \neq 0$; $A_{ti} = A_{ni}$
FOR GAS
$A_{tg} = A_g \times 365 + A_{ng}$
19A



NOTE:

DIFF IN EFF = DIFFERENCE IN EFFICIENCIES

```
      INTEGER POLJUR                                                    COST    0
      INTEGER SI,S1                                                     COST    5
      LOGICAL*1 LDAT                                                    COST   10
      DIMENSION LDAT(4)                                                 COST   15
      DIMENSION EMRAT(2),CONEFF(2),OFHC(4),PRCRT(4),OFSC(4)             COST   20
      DIMENSION AFCOST(3,5,4),AFSCC(2,5),AFSCR(2,5),AFSCD(2,5),         COST   25
     .    AFHC(4,5),SLIM(3,3),AFAC(5),DESCRS(6),ELCS(3)                COST   30
      DIMENSION OEMIS(2),PR(4),OFQ(4),OFBTU(4),TMPAD(4),PPA(3,4),       COST   35
     .    AAA(3,4),BDVAL(3),AAC(3,4),DEVEFF(2),BTUWT(4),ADDA(3),       COST   40
     .    FFAC(4),POL(2),          PCS(2),EMN(2),CER(2),F1(10),F2(3,3)  COST   45
      DIMENSION SI(4),SRL(4,5),SRU(4,5),BEFF(4,2),ACEF(4),ES(4),EP(4),  COST   50
     .    BTUN(4),FSVN(4),HCN(4),INX(4),ABN(4),AMTR(4),HEO(4)          COST   55
      DIMENSION ERRS(34)                                                COST   60
      DIMENSION AEMF(3),DDATE2(20),DDATE(5)                             COST   65
        DIMENSION PFAC(3,3,2),SM(4)                                     COST   70
      COMMON/SOURCO/ISIC,ISIT,IPRC,POLJUR,FRTYPE,EMRAT,CONEFF,GENCAP,   COST   75
     .    OFHC,PRCRTM,SHIFTS,OUSEF,PLUME,IDX,DEVEFF,TEXN,ACFMN,TAC,     COST   80
     .    AMTR,IGAS,CER,ILIN,SXOM                                       COST   85
      COMMON/DEVICE/IREGD(50),IDDEV(50),DEVNAM(6,50),XMP1(50),XMP2(50), COST   90
     .    XMP3(50),CINCST(50),FLF(50),                                  COST   95
     .    PRDROP(50),QLAB(4,50),CATS(50),DCOC(2,50),DFUELF(50),         COST  100
     .    REFFSO(50),REFFPT(50)                                         COST  105
      COMMON /REGRO/ IREGR,XLHR,RATE,ELCS,FLIQS,AFCOST,AFSCC,AFSCR,     COST  110
     .    AFSCD,AFSCG,AFHC,SLIM,AFAC,RNAM(5)                           COST  115
      EQUIVALENCE (LDAT,DDATE2(11))                                     COST  120
      EQUIVALENCE (RATCAP,GENCAP)                                       COST  125
      DATA PPA  /3.,3.,5., 6.,6.,7., 10.,10.,1.E+50, 1.E+50,1.E+50,     COST  130
     .    1.E+50/, AAA /-.8218,-.7426,-.5779, -1.0647,-.9855,-.7069,    COST  135
     .    -1.2937,-1.2145,-.7629, -1.3449,-1.2657,-.7629/,              COST  140
     .    BDVAL /1.0E+6,1.2E+6,2.5E+6/, ADDA /.34,.26,.19/,             COST  145
     .    FFAC  /.490,.245,1.,.404/, AAC /1.6903,1.6903,-1.210, 1.4445, COST  150
     .    1.4445,-1.375,1.2076,1.2076,-1.435,1.1721,1.1721,-1.435/      COST  155
      DATA TMPAD /288.,139.,556.,222./                                  COST  160
      DATA SM /2.0,.008,0.0,0.0/,                                       COST  165
     .    BEFF /.87,.86,.86,.82,.75,.77,.77,.80/,                       COST  170
     .  PFAC/0.,0.,0.,0.5,0.04E-3,0.,16.,10.E-3,15.E-6,                 COST  175
     .        0.,0.,0.,3.0,2.0E-3,0.4E-6,13.,18.E-3,18.E-6/             COST  180
      DATA F1 /15.,16.,17.,13.,24.,2.,13.,20.,5.,20./,                  COST  185
     .  F2  /23.,8.,23.,15.,6.,15.,18.,15.,19./                        COST  190
      DATA ABLK /'    '/                                                COST  195
      NAMELIST /REGREC/                                                 COST  200
     .    IREGR,XLHR,                          RATE,ELCS,FLIQS,         COST  205
     .    AFCOST,AFSCC,AFSCR,AFSCD,AFSCG,                               COST  210
     .    AFHC,SLIM,AFAC,RNAM                                           COST  215
      NAMELIST /DEVREC/                                                 COST  220
     .    IREGD,IDDEV,DEVNAM,XMP1,XMP2,XMP3,                            COST  225
     .                       CINCST,FLF,PRDROP,QLAB,CATS,DCOC,          COST  230
     .    DFUELF,REFFSO,REFFPT                                          COST  235
      ICONC(IISIC,IISIT,IIPRC)= IISIC*10000 +IISIT*10 +IIPRC            COST  240
      NPP = 4911                                                        COST  245
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      ILIN = 54                                                          COST 250
      REWIND 13                                                          COST 255
      REWIND 14                                                          COST 260
      REWIND 12                                                          COST 265
      READ (12,9025) DDATE2                                              COST 270
      READ (5,9055) DDATE,IDEVFG,IDVAP                                   COST 275
      IAZER = 0                                                          COST 280
      WRITE(14) DDATE,IAZER,IAZER                                        COST 285
      WRITE(13,9402) DDATE                                               COST 290
C                                                                        COST 295
C     OBTAIN REGION RECORD                                               COST 300
C                                                                        COST 305
      READ (5,REGREC)                                                    COST 310
      WRITE(6,9045) IREGP,RNAM                                           COST 315
      IF(DDATE2(12).EQ.ABLK) GO TO 50                                    COST 320
      WRITE(6,9050) DDATE,LDAT(4),(DDATE2(I),I=12,16)                    COST 325
      GO TO 60                                                           COST 330
   50 WRITE(6,9051) DDATE,(DDATE2(I),I=4,8)                              COST 335
   60 CALL WREGR (DDATE)                                                 COST 340
      RATE    = .010*RATE                                              COST 345
      DO 100 I  = 1,5                                                    COST 350
      AFAC(I)   = .010*AFAC(I)                                           COST 355
      AFSCC(1,I) =.010 * AFSCC(1,I)                                      COST 360
      AFSCC(2,I) =.010 * AFSCC(2,I)                                      COST 365
      AFSCR(1,I) =.010* AFSCR(1,I)                                       COST 370
      AFSCR(2,I) =.010 * AFSCR(2,I)                                      COST 375
      AFSCD(1,I) =.010 * AFSCD(1,I)                                      COST 380
  100 AFSCD(2,I) =.010 * AFSCD(2,I)                                      COST 385
      AFSCG     = .010*AFSCG                                             COST 390
      DO 110 I=1,3                                                       COST 395
      DO 105 J=1,3                                                       COST 400
  105 SLIM(I,J) = .010 * SLIM(I,J)                                       COST 405
  110 CONTINUE                                                           COST 410
C                                                                        COST 415
C     TEST DEVFLG TO SEE IF THERE IS ANY DEVICE NAMELIST, IF SO          COST 420
C         READ DEVICE NAMELIST.                                          COST 425
      IF (IDEVFG .EQ. 0) GO TO 2200                                      COST 430
C                                                                        COST 435
      IDEVFG = 0                                                         COST 440
      READ (5,DEVREC)                                                    COST 445
C                                                                        COST 450
C         CONVERT PERCENTAGES AND WRITE IF FIRST TIME THRU               COST 455
C                                                                        COST 460
 2200 DO 2400 I=1,50                                                     COST 465
      CINCST(I)  = .010*CINCST(I)                                        COST 470
      REFFSO(I)  = .010*REFFSO(I)                                        COST 475
 2400 REFFPT(I)  = .010*REFFPT(I)                                        COST 480
C                                                                        COST 485
      CALL WDEVR(DDATE)                                                  COST 490
      IF(IDVAP.EQ. 0) GO TO 2000                                         COST 495
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      CALL DEVAPL (ISIC,IPRC,IDX,IDVAP,IAC,DDATE)                          COST 500
      IDVAP = 0                                                            COST 505
C                                                                          COST 510
C     READ SOURCE RECORD                                                   COST 515
C                                                                          COST 520
 2000 CONTINUE                                                             COST 525
      READ (12,9205,END=9000)                                              COST 530
     .          IREGS,ISIC,ISIT,IPRC,DESCRS,XLOCN,YLOCN,POLJUR,OWNERS,    COST 535
     .    PRTYPE,EMRAT(1),EMRAT(2),XOHRS,SHIFTS,CONEFF(1),CONEFF(2),      COST 540
     .    ICDE,GENCAP,(OFHC(I), I=1,4),(PRCRT(I), I=1,4),                 COST 545
     .    (OFSC(I),I=1,4),OFAC,      STKHT,EXITTM,PLUME,PRCRTM,ACFM,      COST 550
     .    STKDIA,EXVEL,OUSEF                                              COST 555
      CONEFF(1) = .010*CONEFF(1)                                           COST 560
      CONEFF(2) = .010*CONEFF(2)                                           COST 565
      OFSC(1)   = .010*OFSC(1)                                             COST 570
      OFSC(2)   = .010*OFSC(2)                                             COST 575
      OFSC(3)   = .010*OFSC(3)                                             COST 580
      OFSC(4)   = .010*OFSC(4)                                             COST 585
      OFAC      = .010*OFAC                                                COST 590
C                                                                          COST 595
C     COMBINE SOURCE IDENTIFIERS USING THE FUNCTION ICONC, AND WRITE       COST 600
C     THE SOURCE RECORD                                                    COST 605
C                                                                          COST 610
      ISOR = ICONC(ISIC,ISIT,IPRC)                                         COST 615
C                                                                          COST 620
C     TEST FOR END OF POINT SOURCES                                        COST 625
C                                                                          COST 630
      IF (ISOR .EQ. 99990000) GO TO 9000                                   COST 635
      IDX = 0                                                              COST 640
      ISITE = 10*ISIT+IPRC                                                 COST 645
      IXOHRS = XOHRS +0.50                                                 COST 650
      IACFM =  ACFM/1000. +.5                                              COST 655
      DO 2100 J=1,2                                                        COST 660
      OEMIS(J) = 0.                                                        COST 665
      IF (CONEFF(J) .LT..9999) OEMIS(J)=EMRAT(J)/(1. -CONEFF(J))           COST 670
 2100 CONTINUE                                                             COST 675
C        WRITE EXISTING SOURCE INFORMATION HERE                            COST 680
      STKHTN=STKHT                                                         COST 685
      STKDIN=STKDIA                                                        COST 690
      EXVELN=EXVEL                                                         COST 695
      TEXN=EXITTM                                                          COST 700
      ACFMN=ACFM                                                           COST 705
      SXOM = 0.0                                                           COST 710
      TAC=0.0                                                              COST 715
      DO 2304 I=1,4                                                        COST 720
      HEO(I) = OFHC(I) * PRCRT(I) * 365.                                   COST 725
 2304 AMTP(I)=PRCRT(I)                                                     COST 730
      AEMIS=0.0                                                            COST 735
      IGAS=0                                                               COST 740
      CER(1) = 0.                                                          COST 745
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      CER(2) = 0.                                                          COST 750
      DEVEFF(1)=0.                                                         COST 755
      DEVEFF(2)=0.                                                         COST 760
      WRITE (14)       IREGR,ISIC,ISIT,IPRC,IDX,PRTYPE,POLJUR,             COST 765
     .    (DEVEFF(J), J=1,2),EMRAT(1),EMRAT(2),PRCRTM,SHIFTS,              COST 770
     .    STKHTN,STKDIN,EXVELN,TEXN,RATCAP,CONEFF(1),CONEFF(2),ACFMN,      COST 775
     .    TAC,(HEO(K),K=1,4),(AMTR(I),I=1,4),CUSEF,AEMIS,IGAS,PLUME        COST 780
      CALL WSOUR(DDATE)                                                    COST 785
C                                                                          COST 790
C     DETERMINE FUEL PARAMETERS FOR THE CURRENT SOURCE                     COST 795
C                                                                          COST 800
C     DETERMINE THE TYPE OF PLANT (IE INDUSTRIAL, POWER, OR COMMERCIAL)    COST 805
      I1 =0                                                                COST 810
      IF(ISIC.EQ.NPP) I1 = 2                                               COST 815
      IF((ISIC.GE.2000).AND.(ISIC.LE.3999)) I1 =1                          COST 820
      IF(I1 .EQ. 0) I1 =3                                                  COST 825
C     MOVE FUEL SULFUR CONTENTS (UPPER AND LOWER) TO SRL AND SRU           COST 830
C     FIND FUEL TYPE INDEX FOR COAL, RESIDUAL, DISTILLATE, AND GAS         COST 835
C                                                                          COST 840
      DO 2405 I=1,4                                                        COST 845
 2405 SI(I) = 0                                                            COST 850
      DO 2410 I=1,5                                                        COST 855
      SRL(1,I) =  AFSCC(1,I)                                               COST 860
      SRU(1,I) =  AFSCC(2,I)                                               COST 865
      SRL(2,I) =  AFSCR(1,I)                                               COST 870
 2410 SRU(2,I) =  AFSCR(2,I)                                               COST 875
      DO 2415 I=1,3                                                        COST 880
      SRL(3,I) = AFSCD(1,I)                                                COST 885
 2415 SRU(3,I) =  AFSCD(2,I)                                               COST 890
      SRL(4,1) =  AFSCG                                                    COST 895
      SRU(4,1) =  AFSCG                                                    COST 900
      DO 2440 I =1,2                                                       COST 905
      DO 2430 J =1,4                                                       COST 910
      IF((OFSC(I).LE. SRU(I,J)).AND.(OFSC(I).GT.SRL(I,J))) SI(I)= J        COST 915
 2430 CONTINUE                                                             COST 920
      IF (OFSC(I).GT. SRU(I,4)) SI(I) =5                                   COST 925
 2440 CONTINUE                                                             COST 930
      IF((OFSC(3).LE. SRU(3,1)).AND.(OFSC(3).GT.SRL(3,1))) SI(3)=1         COST 935
      IF((OFSC(3).LE. SRU(3,2)).AND.(OFSC(3).GT.SRL(3,2))) SI(3)=2         COST 940
      IF(OFSC(3).GT. SRU(3,2)) SI(3)=3                                     COST 945
      SI(4) =1                                                             COST 950
C                                                                          COST 955
C     CALCULATE BTU CONTRIBUTION OF EACH FUEL BURNED, ANNUAL COST OF       COST 960
C         EACH FUEL, AND UNCONTROLLED EMISSION.                            COST 965
C                                                                          COST 970
      N =1                                                                 COST 975
 2450 SBTU = 0.                                                            COST 980
      DO 2460 K = 1,4                                                      COST 985
      BTUWT(K) = PRCRT(K)* OFHC(K)* 365.* BEFF(K,N)                        COST 990
      HEO(K) = PRCRT(K) * OFHC(K) *365.                                    COST 995
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 2460 SBTU = SBTU + BTUWT(K)                                                    COST1000
      N1 = N                                                                    COST1005
      IF (N.EQ. 2) GO TO 2465                                                   COST1010
      N = 2                                                                     COST1015
      IF(SBTU .LE. 0.0) GO TO 3000                                              COST1020
      IF(SBTU .LT.0.1E+9) GO TO 2450                                            COST1025
 2465 CONTINUE                                                                  COST1030
      SACEF =0.                                                                 COST1035
      SEMS  =0.                                                                 COST1040
      SEMP  =0.                                                                 COST1045
C       MAKE TESTS HERE BEFORE DIVIDING                                         COST1050
      IF((EMRAT(1).LE..000001).AND.(EMRAT(2).LE..000001)) GO TO 7000            COST1055
      SOERA = EMRAT(1)                                                          COST1060
      PERA =  EMRAT(2)                                                          COST1065
      IF(SOERA.LE. 0.00001) SOERA = 1.0                                         COST1070
      IF(PERA .LE. 0.00001) PERA  = 1.0                                         COST1075
C                                                                               COST1080
C                                                                               COST1085
      DO 2470 I=1,4                                                             COST1090
      S1 = SI(I)                                                                COST1095
      ACEF(I) = AFCOST(I1,S1,I) * PRCRT(I) * 365.                               COST1100
 2470 SACEF = SACEF + ACEF(I)                                                   COST1105
      ES(1) = 19.E-01 * PRCRT(1) * OFSC(1)                                      COST1110
      ES(2) = 79.3E-04 * PRCRT(2)* OFSC(2)                                      COST1115
      ES(3) = 71.2E-04 * PRCRT(3)* OFSC(3)                                      COST1120
      ES(4) =  C.2E-09 * PRCRT(4)                                               COST1125
      K =  IPRC/10 +1                                                           COST1130
      OFAC1 = OFAC                                                              COST1135
      IF(IPRC.EQ.90) OFAC1=1.                                                   COST1140
      EP(1) = 0.5E-01 * PRCRT(1)* OFAC1 * F1(K)                                 COST1145
      EP(2) = 0.5E-06 * PRCRT(2) * F2(I1,1)                                     COST1150
      EP(3) = 0.5E-06 * PRCRT(3) * F2(I1,2)                                     COST1155
      EP(4) = 0.5E-09 * PRCRT(4) * F2(I1,3)                                     COST1160
      EMS   =(ES(1)+ES(2)+ES(3)+ES(4))* (1-CONEFF(1))                           COST1165
      EMP   =(EP(1)+EP(2)+EP(3)+EP(4))* (1-CONEFF(2))                           COST1170
      IF(MOD(IPRC,10) .NE. 0) GO TO 3000                                        COST1175
      SOERA = EMS                                                               COST1180
      PERA = EMP                                                                COST1185
      IF(((EMS.GE..8*EMRAT(1)).AND.(EMS.LE.1.2*EMRAT(1))).AND.                  COST1190
     .  ((EMP.GE..8*EMRAT(2)).AND.(EMP.LE.1.2*EMRAT(2)))) GO TO 3000            COST1195
      WRITE(13,9130) IREGS,ISIC,ISIT,IPRC,EMS,SOERA,EMP,PERA                    COST1200
      GO TO 2000                                                                COST1205
C     SET INDEX FOR DEVICE TABLE.                                               COST1210
  3000 IDX = IDX + 1                                                            COST1215
      IF (IDX.GT. 50) GO TO 2000                                                COST1220
C     SEE IF DEVICE IS APPLICABLE TO THE POINT SOURCE                           COST1225
      CALL DEVAPL (ISIC,IPRC,IDX,IDVAP,IAC,DDATE)                               COST1230
C                                                                               COST1235
C     IF NOT APPLICABLE, TRY NEXT DEVICE                                        COST1240
C                                                                               COST1245
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      IF (IAC.EQ. 0) GO TO 3000                                          COST1250
C                                                                        COST1255
C     INITILIZE COST VARIABLES.                                          COST1260
C                                                                        COST1265
      TELEC = 0.                                                         COST1270
      TLAB = 0.                                                          COST1275
      GCCOST = 0.                                                        COST1280
      TDISP = 0.                                                         COST1285
      AEMIS =0.                                                          COST1290
      TFUEL = 0.                                                         COST1295
      TCHEM = 0.                                                         COST1300
      TLIQ  = 0.                                                         COST1305
      SXOM = 0.                                                          COST1310
      ACC  = 0.                                                          COST1315
      SOFBTU = 0.                                                        COST1320
      DVEFSO = 0.                                                        COST1325
      DVEFPT = 0.                                                        COST133C
      DO 3100 K =1,4                                                     COST1335
      PR(K) = PRCRT(K)                                                   COST134C
      OFQ(K) = PR(K)/(8.*SHIFTS)* XOHRS                                  COST1345
      OFBTUM = PR(K)* OFHC(K)                                            COST1350
      SOFBTU = SOFBTU + OFBTUM                                           COST1355
 3100 OFBTU(K) = OFBTUM                                                  COST1360
C       MAKE TEST HERE BEFORE DIVIDING                                   COST1365
      IF (SOFBTU .LE. 0.00001) SOFBTU =1.0                               COST1370
      BTUW = OFBTU(1)/SOFBTU                                             COST1375
C                                                                        COST1380
C     CHECK FOR FUEL SWITCHING AND GO TO CALCULATION OF FUEL PARAMETERS. COST1385
C                                                                        COST1390
      IF ((IDDEV(IDX).GE. 027) .AND.(IDDEV(IDX).LE.032)) GO TO 5000      COST1395
C                                                                        COST1400
C     RESUME PROCESSING OF NON-FUEL SWITCHING METHODS.                   COST1405
C                                                                        COST1410
 3120 CONTINUE                                                           COST1415
C                                                                        COST1420
C     COMPUTE NEW EXIT, TEMPERATURE AND EXHAUST GAS VOLUME               COST1425
C                                                                        COST1430
C       MAKE TEST HERE BEFORE DIVIDING                                   COST1435
      IF(EXITTM.LE..001) GO TO 7010                                      COST1440
      IF ((ACFM.LE..00001) .AND. .NOT.((ISIC.EQ.4953.OR.IPRC.EQ.02))     COST1445
     . GO TO 7020                                                        COST1450
      IF (EXITTM .LE. 0.00001) EXITTM = 1.0                              COST1455
      IF (ACFM   .LE. 0.0C001) ACFM = 1.0                                COST1460
      STKHTN = STKHT                                                     COST1465
      EXVELN = EXVEL                                                     COST1470
      TEXN   = EXITTM                                                    COST1475
      ACFMN  = ACFM                                                      COST148C
C                                                                        COST1485
      IF ((((IDX .GE. 001).AND.(IDX.LE.003)).OR.(IDX.EQ.013))            COST149C
     .    TEXN= 294.+.097*(EXITTM-294.)                                  COST1495
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      ISWT = IDX -18                                                    COST1500
      IF ((IDX.GE.019).AND.(IDX.LE.022)) TEXN=EXITTM+TMPAD(ISWT)        COST1505
      ACFMN=ACFM * TEXN/EXITJM                                          COST1510
      STKDIN = STKDIA* SQRT(ACFMN/ACFM)                                 COST1515
      ACFMC= ACFMN                                                      COST1520
      IF ((IDX .LE. 003).OR.(IDX .EQ. 013)) ACFMC=ACFM                  COST1525
C                                                                       COST1530
C     CHECK FOR GAS COOLING IF NEEDED CALCULATE NEW TEMPERATURE,        COST1535
C         GAS VOLUME, AND COST FOR GAS COOLING                          COST1540
C                                                                       COST1545
      IF(((IDX.GE.16).AND.(IDX.LE.18)).OR.((IDX.GE.10).AND.(IDX.LE.12)))COST1550
     .    GO TO 3800                                                   COST1555
 3300 ACFMC=ACFMC/1000.0                                                COST1560
      IF((IDX.GE.001).AND.(IDX.LE.022)) XXX =ACFMC                      COST1565
      TEMP = TEXN                                                       COST1570
      IF ((IDX.GE.040).AND.(IDX.LE.042)) XXX=GENCAP                     COST1575
      IF (IDX.EQ.039) GO TO 3600                                        COST1580
      IF (IDX .EQ. 42) GO TO 3650                                       COST1585
      IF ((IDX.GE.043) .AND.(IDX.LE.45)) GO TO 3700                     COST1590
C                                                                       COST1595
C     DETERMINE LIST PRICE FOR DEVICES 1-22 AND 40-42. FOR DEVICES 1-22 COST1600
C         XXX IS THE GAS VOLUME AND FOR 40-42 XXX IS THE PLANT          COST1605
C         GENERATING CAPACITY.                                          COST1610
C                                                                       COST1615
      H = XMP1(IDX)+ XMP2(IDX) * XXX + XMP3(IDX)* XXX * XXX             COST1620
      H = H * 1000.                                                     COST1625
      GO TO 4000                                                        COST1630
C                                                                       COST1635
C     DETERMINE LIST PRICE FOR DEVICE 39                                COST1640
C                                                                       COST1645
 3600 CONTINUE                                                          COST1650
C       MAKE TEST HERE BEFORE DIVIDING                                  COST1655
      IF ((RATCAP.LE..000001).AND.(MOD(IPRC,10).EQ.0)) GO TO 7030       COST1660
      IF (GENCAP .LE. 0.00001) GENCAP =1.0                              COST1665
      XXX = ALOG10(GENCAP)                                              COST1670
      H = XMP1(IDX) + XMP2(IDX)* XXX + XMP3(IDX) * XXX * XXX            COST1675
      H = 10. **(H+3.)                                                  COST1680
      GO TO 4000                                                        COST1685
C                                                                       COST1690
C     DETERMINE LIST PRICE FOR DEVICE 42                                COST1695
C                                                                       COST1700
 3650 H = XMP1(IDX)*XXX - XMP2(IDX)*XXX * XXX + 9.572E-08 *OFSC(1)*100.*COST1705
     .   XXX - 4.16E-18 * OFSC(1) * XXX * XXX * 100.                    COST1710
      H = H * 1000.                                                     COST1715
      GO TO 4000                                                        COST1720
C                                                                       COST1725
C     DETERMINE LIST PRICE FOR DEVICES  43- 45                          COST1730
C                                                                       COST1735
 3700 CONTINUE                                                          COST1740
      SS = SQERA/2.                                                     COST1745
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      XXX = ALOG10(SS)                                                  COST1750
      ISWT = IDX - 42                                                   COST1755
      PP = 18.48* SS* EXITTM. / (ACFM * SHIFTS)                         COST1760
      DO 3750 K=1,4                                                     COST1765
      I =K                                                              COST1770
      IF (PP .LT. PPA(ISWT,I)) GO TO 3760                               COST1775
 3750 CONTINUE                                                          COST1780
 3760 CONTINUE                                                          COST1785
      AA = AAA (ISWT,I)                                                 COST1790
      H = AA +XMP2(IDX)  * XXX                                          COST1795
      H = 10. **(H+6.)                                                  COST1800
      VALL = BDVAL(ISWT)                                                COST1805
      AAAA = AAC(ISWT,I)                                                COST1810
      GO TO 4000                                                        COST1815
C                                                                       COST1820
C     GAS COOLING -  IF EXITTM IS GREATER THAN 532 KELVIN, APPLY        COST1825
C         APPROPRIATE COST EQUATION DEPENDING ON GAS VOLUME.            COST1830
C                                                                       COST1835
 3800 IF (EXITTM.LE. 532.) GO TO 3300                                   COST1840
      INTA = 1                                                          COST1845
      IF (ACFMN .GE. 100000) GO TO 3850                                 COST1850
C                                                                       COST1855
 3830 SCON   =((.240 * TEXN -71.2)* XOHRS)/TEXN                         COST1860
      SPRIME = ACFMN*((526.2 + .023*TEXN)/TEXN)                         COST1865
      SL     =  ALOG(ACFMN/1000.)                                       COST1870
      IF((ACFMN.GE. 2000.).AND.(ACFMN .LT. 6800.))                      COST1875
     .    EAV = 1131.7 *  EXP(0.436 * SL)                              COST1880
      IF ((ACFMN .GE. 6800.).AND.(ACFMN .LT. 100000.))                  COST1885
     .    EAV =  720.17 * EXP(0.668 * SL)                              COST1890
      IF ((ACFMN.LT. 2000.).OR. (ACFMN.GE.100000)) GO TO 3000           COST1895
      GCCOST = EAV + 124 + .07185* SPRIME + ACFMN *                     COST1900
     . ((.0003225  +(.000016286* SCON) +(.0000C19*SCON)+.04))           COST1905
C                                                                       COST1910
      GCCOST = GCCOST * INTA                                            COST1915
      ACFMC = SPRIME * INTA                                             COST1920
      TEXN  = 532.     ,                                                COST1925
      ACFMN = ACFMC                                                     COST1930
      GO TO 3300                                                        COST1935
 3850 AINT = ACFMN/100000.                                              COST1940
      INTA = AINT + .5                                                  COST1945
      ACFMN = ACFMN / INTA                                              COST1950
      GO TO 3830                                                        COST1955
C                                                                       COST1960
 4000 CONTINUE                                                          COST1965
C                                                                       COST1970
C     APPLY CORROSIVE FACTOR (IF REQUIRED)                              COST1975
C                                                                       COST1980
      IF (ISIC.NE.2819) GO TO 4020                                      COST1985
      IF((IPRC.LT.1) .OR.(IPRC.GT.2)) GO TO 4020                        COST1990
      H = 5.* H                                                         COST1995
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      IF(TEMP.LT.330.) H=.34*H                                          COST2000
 4020 CONTINUE                                                          COST2005
C                                                                       COST2010
C     TOTAL INITIAL OUTLAY                                              COST2015
C                                                                       COST2020
      COSTIN = H*(1.+CINCST(IDX))                                       COST2025
C                                                                       COST2030
C                                                                       COST2035
C      CALCULATE CAPITAL RECOVERY FACTOR                                COST2040
C                                                                       COST2045
      RIE = (1+RATE) ** FLF(IDX)                                        COST2050
      CRF = (RATE*RIE) / (RIE - 1)                                      COST2055
C     ANNUAL CAPITAL CHARGE AND % CHARGE                                COST2060
C                                                                       COST2065
      ACC = CRF * COSTIN                                                COST2070
      IF (((IDX .GE.043).AND.(IDX .LE.045)) .AND.(H.LT.VALL)) GO TO 3000COST2075
C                                                                       COST2080
C     OBTAIN EXISTING DEVICE CORRECTION FACTOR                          COST2085
C                                                                       COST2090
      CALL EXDEVC (IDDEV(IDX),CONEFF(2),EFAC)                           COST2095
C                                                                       COST2100
C     ADDITIONAL CONSIDERATIONS (SPECIAL CASES)                         COST2105
C                                                                       COST2110
      IF ((IDX.LT.16).OR.(IDX.GT.18))  GO TO 4300                       COST2115
C                                                                       COST2120
C     FABRIC FILTER RESTRICTIONS - IF THE EXISTING DEVICE IS A WET      COST2125
C         COLLECTOR TRY THE NEXT DEVICE                                 COST2130
C                                                                       COST2135
      IF(((IC.E.GE.1).AND.(ICDE.LE.3)).OR.(ICDE.EQ.13))  GO TO 3000     COST2140
C                                                                       COST2145
      ISWT = IDX -15                                                    COST2150
      GO TO (4210,4220,4230),ISWT                                       COST2155
C                                                                       COST2160
 4210 IF  (TEXN   .GT. 394.0) GO TO 4300                                COST2165
      GO TO 3000                                                        COST2170
C                                                                       COST2175
 4220 IF ((TEXN .GE.355.0).AND.(TEXN.LE.394.0)) GO TO 4300              COST2180
      GO TO 3000                                                        COST2185
C                                                                       COST2190
 4230 IF  (TEXN .LT. 355.0) GO TO 4300                                  COST2195
      GO TO 3000                                                        COST2200
C                                                                       COST2205
 4300 REFPTB = REFFPT(IDX)                                              COST2210
      IF (MOD(IPRC,10).NE.0) GO TO 4320                                 COST2215
      IF(BTUW.GT.0.50) GO TO 4320                                       COST2220
      REFPTA = REFPTB +.0001                                            COST2225
      REFPTB = 0.                                                       COST2230
C                                                                       COST2235
      IF (REFPTA .GT. .00) REFPTB=.05                                   COST2240
      IF (REFPTA .GT. .50) REFPTB=.10                                   COST2245
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      IF (REFPTA .GT. .80) REFPTB=.30                                    COST2250
      IF (REFPTA .GT. .92) REFPTB=.50                                    COST2255
      IF (REFPTA .GT. .98) REFPTB=.75                                    COST2260
 4320 CONTINUE                                                           COST2265
      APEF = 1.-(1.-REFPTB) * EFAC                                       COST2270
      FAE = APEF * 100.0                                                 COST2275
      IF ((IDX.EQ. 013).AND.(FAE.LT.20.0)) FAE=20.0                      COST2280
      DFAE = FAE/100.                                                    COST2285
      DEVEFF(1) = REFSO(IDX)                                             COST2290
      DEVEFF(2) = DFAE                                                   COST2295
C                                                                        COST2300
C     ELECTROSTATIC PRECIPITATOR RESTRICTIONS                            COST2305
C                                                                        COST2310
      IF ((IDX .LT. 10).OR.(IDX.GT.12)) GO TO 4340                       COST2315
      IF(BTUW.GT.0.50) GO TO 4340                                        COST2320
      IF (IDX .NE. 10) GO TO 3000                                        COST2325
 4340 CONTINUE                                                           COST2330
C                                                                        COST2335
C     30% CRITERION                                                      COST2340
C                                                                        COST2345
      IF (((IDX .GE. 001).AND.(IDX.LE.12)).AND.(DEVEFF(2).LT.0.30))      COST2350
     .       GO TO 3000                                                  COST2355
C                                                                        COST2360
C     MIST COLLECTOR RESTRICTIONS                                        COST2365
C                                                                        COST2370
      IF ((IDX.LT.14).OR.(IDX.GT.015)) GO TO 4350                        COST2375
      IF ((ICDE .LT.014).OR.(ICDE.GT.015)) GO TO 4350                    COST2380
      IF (IDX.EQ. 015)  GO TO 3000                                       COST2385
      DEVEFF(2) = 0.90                                                   COST2390
 4350 CONTINUE                                                           COST2395
C                                                                        COST2400
C     OPERATING AND MAINTENANCE COSTS                                    COST2405
C                                                                        COST2410
      VH = ACFMN * XOHRS                                                 COST2415
C     ELECTRICITY                                                        COST2420
      ISWT = IDX - 9  /                                                  COST2425
      ADDE = 0.                                                          COST2430
      IF ((IDX .GE.010).AND.(IDX.LE.012)) ADDE =ADDA(ISWT) *.001         COST2435
      QELEC = VH *(1.955E-4 * PRDROP(IDX) + ADDE)                        COST2440
C                                                                        COST2445
C     LIQUID                                                             COST2450
C                                                                        COST2455
      QLIQ =0.                                                           COST2460
      IF ((IDX.LE.003).OR.(IDX.EQ.013)) QLIQ =3.E-2 * VH                 COST2465
C                                                                        COST2470
C     CHEMICAL                                                           COST2475
C                                                                        COST2480
      PS = EMRAT(1) * DEVEFF(1)                                          COST2485
      QCHEM = PS* XOHRS/(8.* SHIFTS)                                     COST2490
C                                                                        COST2495
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C     FUEL                                                                  COST2500
C                                                                           COST2505
      ISWT = IDX -18                                                        COST2510
      QFUEL = 0.                                                            COST2515
      IF ((IDX .GE.019).AND.(IDX.LE.022)) QFUEL = VH* FFAC(ISWT)            COST2520
C                                                                           COST2525
C     DISPOSAL                                                              COST2530
C                                                                           COST2535
      TDISP = 0.                                                            COST2540
      DO 4360  J =1,2                                                       COST2545
      POL(J) = EMRAT(J) * DEVEFF(J) * XOHRS/8.0/SHIFTS                      COST2550
      PCS(J) =              DCOC(J,IDX)                                     COST2555
      TDISP = TDISP + POL(J)*PCS(J)                                         COST2560
 4360 CONTINUE                                                              COST2565
      IF ((IDX.EQ.13) .AND. (DEVEFF(2).LT.0.20))                            COST2570
     .      TDISP = TDISP + (0.20 -DEVEFF(2))*EMRAT(2)                      COST2575
C                                                                           COST2580
C     LABOR                                                                 COST2585
C                                                                           COST2590
      QLABR = 0.                                                            COST2595
      I=2                                                                   COST2600
      IF (ACFMN .LE. .04E+6) I=1                                            COST2605
      IF (ACFMN .GT. 1.0E+6) I=4                                            COST2610
      IF((ACFMN .GT. .25E+6).AND.(ACFMN.LE.1.0E+6)) I=3                     COST2615
      QLABR = XOHRS* QLAB(I,IDX)                                            COST2620
C                                                                           COST2625
C     TOTAL O & M COSTS BY SUMMING COST ELEMENTS (DEPENDS ON DEVICE)        COST2630
C                                                                           COST2635
      TELEC = QELEC * ELCS(I1)                                              COST2640
      TLIQ  = QLIQ * FLIQS                                                  COST2645
      TCHEM = QCHEM * CATS(IDX)                                             COST2650
      TFUEL = QFUEL * AFCOST(I1,1,4)                                        COST2655
      TLAB  = QLABR * XLHR                                                  COST2660
C                                                                           COST2665
      IF  (IDX.LE.022) SXOM=TELEC+TLIQ+TCHEM+TFUEL+TDISP+TLAB               COST2670
C                                                                           COST2675
      IF (IDX .EQ. 39) SXOM=0.05*COSTIN+TELEC+TDISP                         COST2680
C                                                                           COST2685
      IF (IDX .EQ. 40) SXOM=438.0*(PRCRT(1)+PRCRT(2)/250.0+                 COST2690
     . PRCRT(3)/278.)                                                       COST2695
C                                                                           COST2700
      IF (IDX .EQ. 41) SXOM=356.0*PRCRT(1)*(.17+7.0*OFSC(1) * CATS(IDX))    COST2705
     .    + 25000.                                                          COST2710
C                                                                           COST2715
      IF (IDX .EQ. 42) SXOM=365.0*PRCRT(1)*(.196+3.82*OFSC(1)*CATS(IDX))    COST2720
     .    +130000.                                                          COST2725
C                                                                           COST2730
      IF((IDX .GE. 43).AND.(IDX.LE. 44)) SXOM =.75 *ALOG10(SOERA)           COST2735
     .    + AAAA                                                            COST2740
C                                                                           COST2745
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      IF (IDX.EQ. 45) SXOM=0.81*ALOG10(SOERA)     +AAAA                    COST2750
C                                                                          COST2755
      IF((IDX.GE. 43) .AND.(IDX.LE. 45)) SXOM=10.**SXOM + TDISP            COST2760
     .    - COSTIN/FLF(IDX)                                               COST2765
C                                                                          COST2770
      IF((IDX.GE. 39) .AND.(IDX.LE. 45)) GO TO 4500                        COST2775
C4410 CONTINUE                                                             COST2780
C4420 CONTINUE                                                             COST2785
 4430 CONTINUE                                                             COST2790
      TAC = ACC +SXOM + GCCOST                                             COST2795
      GO TO 8000                                                           COST2800
C                                                                          COST2805
C     SULFUR CONTROL MEASURES FOR DEVICES 39 THRU 45                       COST2810
C                                                                          COST2815
 4500 CONTINUE                                                             COST2820
C                                                                          COST2825
      IF (EMRAT(1) .LE. 20.0) GO TO 3000                                   COST2830
      IF (((IDX .EQ. 41).OR.(IDX.EQ. 42)).AND. (OFBTU(1)/SOFBTU.LE.0.4))COST2835
     .    GO TO 3000                                                       COST2840
      OFSC1= OFSC(1)                                                       COST2845
      PR1  =PR(1)                                                          COST2850
      IF ((IDX.GE. 43).AND.(IDX.LE. 45)) GO TO 4430                        COST2855
      IF (ISIC .NE. 4911) GO TO 3000                                       COST2860
      GO TO 4430                                                           COST2865
C                                                                          COST2870
C     FUEL  SWITCHING SECTION                                              COST2875
 5000 CONTINUE                                                             COST2880
      DO 5005 I =1,4                                                       COST2885
      ABN(I)   0.0                                                         COST2890
      BTUN(I) =0.0                                                         COST2895
      FSVN (I) =0.0                                                        COST2900
      INX(I) = 1                                                           COST2905
 5005 HCN (I)  =0.0                                                        COST2910
      ISWT = IDX -26                                                       COST2915
      GO TO (5010,5020,5030,5040,5050,5060), ISWT                          COST2920
C                                                                          COST2925
C     ELIMINATE COAL                                                       COST2930
C                                                                          COST2935
 5010 IF(BTUWT(1).GT.0.0) GO TO 5500                                       COST2940
      GO TO 3000                                                           COST2945
C                                                                          COST2950
C     ELIMINATE COAL AND RESIDUAL                                          COST2955
C                                                                          COST2960
 5020 IF((BTUWT(1).GT.0.0).OR.(BTUWT(2).GT.0.0)) GO TO 5600                COST2965
      GO TO 3000                                                           COST2970
C                                                                          COST2975
C     ELIMINATE COAL,RESIDUAL,AND DISTILLATE                               COST2980
C                                                                          COST2985
 5030 IF(((BTUWT(1).GT.0.0).OR.(BTUWT(2).GT.0.0).OR.(BTUWT(3).GT.0.0))) COST2990
     .    GO TO 5700                                                      COST2995
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      GO TO 3000                                                        COST3000
C                                                                       COST3005
C     FUEL SUBSTITUTION MEASURE 1                                       COST3010
C                                                                       COST3015
 5040 IX = 1                                                            COST3020
      GO TO 5070                                                        COST3025
C                                                                       COST3030
C     FUEL SUBSTITUTION MEASURE 2                                       COST3035
C                                                                       COST3040
 5050 IX = 2                                                            COST3045
      GO TO 5070                                                        COST3050
C                                                                       COST3055
C     FUEL SUBSTITUTION MEASURE 3                                       COST3060
C                                                                       COST3065
 5060 IX = 3                                                            COST3070
 5070 IF (((OFSC(1).GT.SLIM(1,IX)).OR.(OFSC(2).GT.SLIM(2,IX))).OR.      COST3075
     .  (OFSC(3).GT.SLIM(3,IX))) GO TO 5800                             COST3080
      GO TO 3000                                                        COST3085
C                                                                       COST3090
 5500 CONTINUE                                                          COST3095
      IND = 5                                                           COST3100
 5505 IF (IND.LE. 0) GO TO 5550                                         COST3105
      IF((OFSC(1).LE. AFSCR(2,IND)).AND.(OFSC(1).GT.AFSCR(1,IND)))      COST3110
     .    GO TO 5515                                                    COST3115
      IF ((OFSC(1).GT.AFSCR(2,IND)).AND.(AFCOST(I1,IND,2).GT.0.00))     COST3120
     .    GO TO 5515                                                    COST3125
 5510 IND = IND - 1                                                     COST3130
      GO TO 5505                                                        COST3135
 5515 IF (AFCOST(I1,IND,2).LE. 0.00000) GO TO 5510                      COST3140
      BTUN(2) = BTUWT(1)                                                COST3145
      IF (OFSC(1).LE. AFSCR(2,IND)) FSVN(2) =OFSC(1)                    COST3150
      IF (OFSC(1).GT. AFSCR(2,IND)) FSVN(2) =AFSCR(2,IND)               COST3155
      HCN(2)  = AFHC(2,IND)                                             COST3160
      INX(2) = IND                                                      COST3165
      GO TO 5580                                                        COST3170
 5550 CONTINUE                                                          COST3175
      IND = 4                                                           COST3180
 5555 IND = IND - 1                                                     COST3185
      IF (IND.LE. 0) GO TO 5570                                         COST3190
      IF((OFSC(1).LE. AFSCD(2,IND)).AND.(OFSC(1).GT.AFSCD(1,IND)))      COST3195
     .    GO TO 5560                                                    COST3200
      IF ((OFSC(1).GT.AFSCD(2,IND)).AND.(AFCOST(I1,IND,3).GT.0.00))     COST3205
     .    GO TO 5560                                                    COST3210
      GO TO 5555                                                        COST3215
 5560 IF(AFCOST(I1,IND,3).LE. 0.00000) GO TO 5555                       COST3220
      BTUN(3) = BTUWT(1)                                                COST3225
      IF (OFSC(1).LE. AFSCD(2,IND)) FSVN(3) =OFSC(1)                    COST3230
      IF (OFSC(1).GT. AFSCD(2,IND)) FSVN(3) =AFSCD(2,IND)               COST3235
      HCN(3) = AFHC(3,IND)                                              COST3240
      INX(3) = IND                                                      COST3245
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      GO TO 5580                                                        COST3250
5570  CONTINUE                                                          COST3255
      IND =1                                                            COST3260
      IF (AFCOST(I1,IND,4).LE. 0.0000) GO TO 5590                       COST3265
      BTUN(4) =BTUWT(1)                                                 COST3270
      HCN(4)  = AFHC(4,IND)                                             COST3275
      INX(4) = IND                                                      COST3280
5580  CONTINUE                                                          COST3285
      COSTO = ACEF(1)                                                   COST3290
      EMSO  = ES(1)                                                     COST3295
      EMPO  = EP(1)                                                     COST3300
      GO TO 5900                                                        COST3305
5590  WRITE(13,5591) IREG,ISIC,ISIT,IPRC                                COST3310
      IDX = 29                                                          COST3315
      GO TO 3000                                                        COST3320
5600  CONTINUE                                                          COST3325
      IND = 4                                                           COST3330
      IF(BTUWT(2) .LE. 0.0) SCMIN = OFSC(1)                             COST3335
      IF(BTUWT(1) .LE. 0.0) SCMIN = OFSC(2)                             COST3340
      IF((BTUWT(2) .LE. 0.0).OR.(BTUWT(1).LE. 0.0)) GO TO 5610          COST3345
5605  SCMIN =AMIN1(OFSC(1),OFSC(2))                                     COST3350
5610  IND = IND -1                                                      COST3355
      IF(IND .LE. 0) GO TO 5640                                         COST3360
      IF((SCMIN .LE. AFSCD(2,IND)).AND.(SCMIN.GE.AFSCD(1,IND)))         COST3365
     .    GO TO 5615                                                    COST3370
      IF((SCMIN.GT.AFSCD(2,IND)).AND.(AFCOST(I1,IND,3).GT.0.00))        COST3375
     .    GO TO 5615                                                    COST3380
      GO TO 5610                                                        COST3385
5615  IF  (AFCOST(I1,IND,3) .LE. 0.00000) GO TO 5610                    COST3390
      BTUN(3) = BTUWT(1) + BTUWT(2)                                     COST3395
      IF  (SCMIN.LE. AFSCD(2,IND)) FSVN(3) = SCMIN                      COST3400
      IF  (SCMIN.GT. AFSCD(2,IND)) FSVN(3) = AFSCD(2,IND)               COST3405
      HCN(3)  = AFHC(3,IND)                                             COST3410
      INX(3) = IND                                                      COST3415
      GO TO 5680                                                        COST3420
5640  CONTINUE                                                          COST3425
      IND = 1                                                           COST3430
      IF (AFCOST(I1,IND,4).LE. 0.0000) GO TO 5590                       COST3435
      BTUN(4) = BTUWT(1)+ BTUWT(2)                                      COST3440
      HCN(4)  = AFHC(4,IND)                                             COST3445
      INX(4) = IND                                                      COST3450
5680  COSTO = ACEF(1) + ACEF(2)                                         COST3455
      EMSO  = ES(1) + ES(2)                                             COST3460
      EMPO  = EP(1) + EP(2)                                             COST3465
      GO TO 5900                                                        COST3470
5700  CONTINUE                                                          COST3475
      IND = 1                                                           COST3480
      IF (AFCOST(I1,1,4).LE. 0.0000) GO TO 5590                         COST3485
      BTUN(4) = BTUWT(1) + BTUWT(2) + BTUWT(3)                          COST3490
      HCN(4)  =AFHC(4,IND)                                              COST3495
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      INX(4) = IND                                                      COST3500
      COSTO = ACEF(1) + ACEF(2) + ACEF(3)                               COST3505
      EMSO  = ES(1)+ES(2)+ES(3)                                         COST3510
      EMPO  = EP(1)+EP(2)+EP(3)                                         COST3515
      GO TO 5900                                                        COST3520
 5800 CONTINUE                                                          COST3525
      EMPO =0.0                                                         COST3530
      EMSO =0.0                                                         COST3535
      COSTO=0.0                                                         COST3540
      I = 1                                                             COST3545
 5810 L = SI(I)                                                         COST3550
      IF (OFSC(I).GT. SLIM(I,IX)) GO TO 5820                            COST3555
 5815 I = I + 1                                                         COST3560
      IF(I.LE.3) GO TO 5810                                             COST3565
      GO TO 5900                                                        COST3570
 5820 CONTINUE                                                          COST3575
      K = I                                                             COST3580
      EMPO = EMPO +EP(I)                                                COST3585
      EMSO = EMSO +ES(I)                                                COST3590
      COSTO = COSTO + ACEF(I)                                           COST3595
 5830 IF   (SRL(K,L).GT. SLIM(K,IX)) GO TO 5850                         COST3600
      IF(OFSC(I) .LE. SRU(K,L)) FSVN(K) = OFSC(I)                       COST3605
      IF(OFSC(I) .GT. SRU(K,L)) FSVN(K) = SRU(K,L)                      COST3610
      HCN(K)  = AFHC(K,L)                                               COST3615
      INX(K) = L                                                        COST3620
 5840 BTUN(K) = BTUN(K) + BTUWT(I)                                      COST3625
      GO TO 5815                                                        COST3630
 5850 L = L -1                                                          COST3635
      IF (L.L . 0) GO TO 5860                                           COST3640
      GO TO 5830                                                        COST3645
 5860 K = K +1                                                          COST3650
      L = 5                                                             COST3655
      IF (K.EQ. 3) L =3                                                 COST3660
      IF (K .LE. 3) GO TO 5830                                          COST3665
      K = 4                                                             COST3670
      L = 1                                                             COST3675
      HCN(K)  = AFHC(K,L)                                               COST3680
      INX(K) = L                                                        COST3685
      GO TO 5840                                                        COST3690
 5900 CONTINUE                                                          COST3695
      DO 5910 I =1,4                                                    COST3700
      IF(HCN(I) .LE. 0.0) GO TO 5905                                    COST3705
      ABN(I) = BTUN(I)/(HCN(I)* BEFF(I,N1))                             COST3710
      GO TO 5910                                                        COST3715
 5905 ABN(I) = 0.0                                                      COST3720
      INX(I) = 1                                                        COST3725
 5910 CONTINUE                                                          COST3730
C                                                                       COST3735
C     COMPUTE COST OF NEW FUELS                                         COST3740
C                                                                       COST3745
```

```
      COSTN = ABN(1)* AFCOST(I1,INX(1),1)+ ABN(2)* AFCOST(I1,INX(2),2)  COST3750
     .    +   ABN(3)* AFCOST(I1,INX(3),3)+ ABN(4)*AFCOST(I1,INX(4),4)  COST3755
C                                                                       COST3760
C     COMPUTE ADDITIONAL FUEL COST                                      COST3765
C                                                                       COST3770
      CADD  = COSTN- COSTO                                              COST3775
C                                                                       COST3780
C     COMPUTE NEW EMISSION RATES                                        COST3785
C                                                                       COST3790
      SDIF = 1-CONEFF(1)                                                COST3795
      PDIF = 1-CONEFF(2)                                                COST3800
      IF (SDIF.LE. 0.000) GO TO 5990                                    COST3805
      IF (PDIF.LE. 0.000) GO TO 5995                                    COST3810
      A1 = SOERA /SDIF                                                  COST3815
      A2 = PERA/ PDIF                                                   COST3820
      B1 =(ABN(1) * 38.E-01 * FSVN(1)*.5)/365.                          COST3825
      C1 =(ABN(2) * 79.3E-04 * FSVN(2))/365.                            COST3830
      D1 =(ABN(3) * 71.8E-04 * FSVN(3))/365.                            COST3835
      E1 =(ABN(4) * .4 * .5E-09)/365.                                   COST3840
      K  = IPRC/10 +1                                                   COST3845
      AFAC1 = AFAC(IND)                                                 COST3850
      IF (IPRC.EQ.90) AFAC1 = 1.                                        COST3855
      B2 =(ABN(1)*AFAC1     *F1(K)*.5E-01)/365.                         COST3860
      C2 =(ABN(2) * F2(I1,1)* .5E-06)/365.                              COST3865
      D2 =(ABN(3) * F2(I1,2)* .5E-06)/365.                              COST3870
      E2 =(ABN(4) * F2(I1,3)* .5E-09)/365.                              COST3875
      EMSN =(A1 -EMSO + B1 + C1 + D1 + E1)* SDIF                        COST3880
      EMPN =(A2 -EMPO + B2 + C2 + D2 + E2)                              COST3885
C     COMPUTE TOTAL ANNUAL COST                                         COST3890
      TAC  = CADD                                                       COST3895
C                                                                       COST3900
C     COMPUTE NEW EFFICIENCIES                                          COST3905
      DEVEFF(1) = 1-EMSN/SOERA                                          COST3910
      DEVEFF(2) =  1-EMPN/PERA                                          COST3915
C                                                                       COST3920
C     COMPUTE THE MAXIMUM ALLOWABLE EMISSION FOR EACH FUEL              COST3925
C                                                                       COST3930
      DO 5915 I=1,3                                                     COST3935
 5915 AEMF(I) = 0.0                                                     COST3940
      IF((IDX.GE.27).AND.(IDX.LE.29)) GO TO 5940                        COST3945
      DO 5930 I=1,3                                                     COST3950
      IF (OFSC(I).LE. 0.00) GO TO 5920                                  COST3955
      RATS = SLIM(I,IX)/OFSC(I)                                         COST3960
      IF (RATS.GE.1) AEMF(I) = ES(I)                                    COST3965
      IF (AEMF(I).LE.0.0)  AEMF(I) = ES(I) * RATS                       COST3970
      GO TO 5930                                                        COST3975
 5920 AEMF(I)  = ES(I)                                                  COST3980
 5930 AEMIS = AEMIS + AEMF(I)                                           COST3985
      GO TO 5950                                                        COST3990
 5940 AEMIS = 0.0                                                       COST3995
```

```
 5950 CONTINUE                                                          COST4000
C                                                                       COST4005
C     COMPUTE NEW RESULTANT FUEL QUANTITIES                             COST4010
C                                                                       COST4015
      AMTR(1) = 0.                                                      COST4020
      AMTR(2) = 0.                                                      COST4025
      AMTR(3) = 0.                                                      COST4030
      AMTR(4) = 0.                                                      COST4035
      IF (((ISWT.EQ.1).OR.(ISWT.EQ.2).OR.(ISWT.EQ.3)) GO TO 6050 .      COST4040
      DO 6010 I=1,3                                                     COST4045
      IF (ABN(I).EQ. 0.00) AMTR(I) = PRCRT(I) * 365.                    COST4050
 6010 IF (ABN(I).NE. 0.00) AMTR(I) = ABN(I)                             COST4055
      AMTR(4) = PRCRT(4) * 365.  + ABN(4)                               COST4060
      GO TO 6100                                                        COST4065
 6050 IF(ISWT.EQ.1) GO TO 6055                                          COST4070
      IF(ISWT.EQ.2) GO TO 6060                                          COST4075
      IF(ISWT.EQ.3) GO TO 6065                                          COST4080
 6055 AMTR(2) = ABN(2) + PRCRT(2)  * 365.                               COST4085
 6060 AMTR(3) = ABN(3) + PRCRT(3)  *365.                                COST4090
 6065 AMTR(4) = ABN(4) + PRCRT(4)   * 365.                              COST4095
 6100 DO 6066 I=1,4                                                     COST4100
 6066 AMTR(I) = AMTR(I) / 365.                                          COST4105
      GO TO 8000                                                        COST4110
 5990 WRITE(13,5991) IREGS,ISIC,ISIT,IPRC,CONEFF(1)                     COST4115
      GO TO 2000                                                        COST4120
 5995 WRITE(13,5996) IREGS,ISIC,ISIT,IPRC,CONEFF(2)                     COST4125
      GO TO 2000                                                        COST4130
C                                                                       COST4135
 7000 WRITE(13,7005) IREGS,ISIC,ISIT,IPRC                               COST4140
      GO TO 2000                                                        COST4145
 7010 WRITE(13,7015) IREGS,ISIC,ISIT,IPRC                               COST4150
      GO TO 2000                                                        COST4155
 7020 WRITE(13,7025) IREGS,ISIC,ISIT,IPRC                               COST4160
      GO TO 2000                                                        COST4165
 7030 WRITE(13,7035) IREGS,ISIC,ISIT,IPRC                               COST4170
      GO TO 2000                                                        COST4175
C     OUTPUT SECTION FOR EACH APPLICABLE DEVICE                         COST4180
C                                                                       COST4185
 8000 CONTINUE                                                          COST4190
      IF (IDX.LE.32) GO TO 8040                                         COST4195
      DO 8030 I=1,4                                                     COST4200
 8030 AMTR(I) = PRCRT(I)                                                COST4205
 8040 CONTINUE                                                          COST4210
      DO  8120 J = 1,2                                                  COST4215
      EMRATJ = EMRAT(J)                                                 COST4220
      EMNJ = (1.-DEVEFF(J))*EMRATJ                                      COST4225
      EMN(J) = EMNJ                                                     COST4230
      CERJ = 0.                                                         COST4235
      IF (DEVEFF(J) .LT. 0.10) GO TO 8120                               COST4240
      DENJ = EMRATJ -EMNJ                                               COST4245
```

```
      IF (DENJ .LE.0.000001) GO TO 8120                                  COST4250
      CERJ = TAC/DENJ/365.                                               COST4255
 8120 CER(J) = CERJ                                                      COST4260
      IF (GCCOST.GT.0.00) IGAS=1                                         COST4265
      WRITE (14)      IREGR,ISIC,ISIT,IPRC,IDX,PRTYPE,POLJUR,            COST4270
     .    (DEVEFF(J), J=1,2),EMRAT(1),EMRAT(2),PRCRTM,SHIFTS,            COST4275
     .    STKHTN,STKDIN,EXVELN,TEXN,RATCAP,CONEFF(1),CONEFF(2),ACFMN,    COST4280
     .    TAC,(HEO(K),K=1,4),(AMTR(I),I=1,4),CUSEF,AEMIS,IGAS,PLUME      COST4285
      CALL #SOUR(DDATE)                                                  COST4290
      IGAS = 0                                                           COST4295
C                                                                        COST4300
C                                                                        COST4305
C     TRY NEXT DEVICE                                                    COST4310
C                                                                        COST4315
      GO TO 3000                                                         COST4320
C                                                                        COST4325
C     END OF COST MODEL                                                  COST4330
C                                                                        COST4335
 9000 CONTINUE                                                           COST4340
 5591 FORMAT( '0',4X,'CM02 - NO FUEL SUBSTITUTES AVAILABLE FOR SOURCE',  COST4345
     . ' ID ' I3,I4,I3,I2/)                                              COST4350
 5991 FORMAT( '0',4X,'CM03 - CONTROL EFFICIENCY OF SO2 SHOULD NOT BE 1', COST4355
     .  ' FOR SOURCE ID 'I3,I4,I3,I2,1X,'CONTROL EFF.= ' F3.2/)          COST4360
 5996 FORMAT( 'C',4X,'CM04 - CONTROL EFFICIENCY OF PART SHOULD,NOT BE ', COST4365
     .  '1 FOR SOURCE ID ',I3,I4,I3,I2,1X,'CONTROL EFF.= 'F3.2/)         COST4370
 7005 FORMAT('0',4X,'CM05 - SO2 AND PART. EMISSION SHOULD NOT BE ZERO',  COST4375
     .    1X,'FOR SOURCE ID ',I3,I4,I3,I2/)                              COST4380
 7015 FORMAT('0',4X,'CM06 - EXIT TEMPERATURE SHOULD NOT BE ZERO FOR ',   COST4385
     .    'SOURCE ID ',I3,I4,I3,I2/)                                     COST4390
 7025 FORMAT('0',4X,'CM07 - EXHAUST VOLUMNE SHOULD NOT BE ZERO FOR ',    COST4395
     .    'SOURCE ID ',I3,I4,I3,I2/)                                     COST4400
 7035 FORMAT('0',4X,'CM08 - RATED CAPACITY SHOULD NOT BE ZERO FOR ',     COST4405
     .    'SOURCE ID ',I3,I4,I3,I2/)                                     COST4410
      REWIND 13                                                          COST4415
 9007 READ(13,9080,END=9090) ERRS                                        COST4420
      WRITE(6,9080) ERRS                                                 COST4425
      GO TO 9007                                                         COST4430
 9025 FORMAT( 20A4)                                                      COST4435
 9045 FORMAT('1',T41,'CONTROL COST PROGRAM   REGION: ',I3,1X,5A4 /)      COST4440
 9050 FORMAT(' ',T34,'RUN DATE '5A4,T66,'SOURCE DATE 'A1,4A4,A1/)        COST4445
 9051 FORMAT(' ',T34,'RUN DATE '5A4,T66,'SOURCE DATE '4A4,A2/)           COST4450
 9055 FORMAT( 5A4,I1,I1,58X)                                             COST4455
 9080 FORMAT(33A4,A1)                                                    COST4460
 9090 CONTINUE                                                           COST4465
 9130 FORMAT( '0',4X,'CM01 - INPUT ERROR IN SO2 OR PART. EMISSION RATE'/ COST4470
     .  11X,'SOURCE ID ',I3,I4,I3,I2,1X,'EMISSION FACTOR INPUT EMISSION' COST4475
     .  /30X,'SO2 ',4X,F8.3,7X,F8.3/, 30X,'PART',4X,F8.3,7X,F8.3/)       COST4480
 9205 FORMAT(  I3,I4,I3,I2,5A4,A3,F4.1,F5.1,I2,A1,A1,F7.3,F7.3,F4.0,     COST4485
     .  F2.1,F3.1,F4.2,I3,E12.5,E10.3,E11.4,E11.4,F4.0,F5.0,F6.0,F6.0,   COST4490
     .  F8.0,F3.2,F3.2,F3.2,F5.4,F3.1,F7.3,F7.3,F7.3,F8.0,F7.0,F7.5,.   COST4495
     .  F7.4,F3.2)                                                       COST4500
 9401 FORMAT( 32X,5A4)                                                   COST4505
 9402 FORMAT('1',T40,'COST MODEL ERROR MESSAGES  DATE:  ',5A4//)         COST4510
      STOP                                                               COST4515
      END                                                                COST4520
```

SUBPROGRAM WREGR

PURPOSE

The subprogram WREGR prints the Regional input data.

CALLING SEQUENCE

```
CALL WREGR (DDATE)
```

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regional data (PRINTER).

PROCEDURE

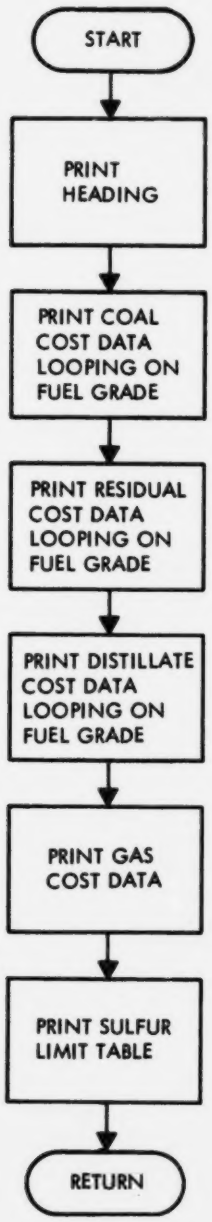
1. Print headings.
2. Print regional cost data.
3. Print fuel sulfur limit table.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

DDATE	Date of run input via cards.
REGRO	Common block containing regional data (Refer to MAIN for a description of each variable.)


START
PRINT HEADING
PRINT COAL COST DATA LOOPING ON FUEL GRADE
PRINT RESIDUAL COST DATA LOOPING ON FUEL GRADE
PRINT DISTILLATE COST DATA LOOPING ON FUEL GRADE
PRINT GAS COST DATA
PRINT SULFUR LIMIT TABLE
RETURN

```
      SUBROUTINE WREGR (DDATE)                                          WREG   C
      DIMENSION DDATE(5)                                                WREG   5
      COMMON/REGRO/ IREGR,XLHR,RATE,ELCS(3),FLIQS,AFCOST(3,5,4),        WREG  10
     .     AFSCC(2,5),AFSCR(2,5),AFSCD(2,5),AFSCG,AFHC(4,5),SLIM(3,3),  WREG  15
     .     AFAC(5),RNAM(5)                                              WREG  20
      WRITE(6,100) RNAM,DDATE                                           WREG  25
      WRITE(6,110) XLHR,FLIQS,RATE                                      WREG  30
      WRITE(6,120) ELCS(2),ELCS(1),ELCS(3)                              WREG  35
      WRITE(6,130)                                                      WREG  40
      WRITE(6,135)                                                      WREG  45
      WRITE(6,140)                                                      WREG  50
      DO 10 I=1,5                                                       WREG  55
      WRITE(6,150) I,AFSCC(2,I),AFSCC(1,I),AFHC(1,I),AFAC(I),           WREG  60
     .     AFCOST(2,I,1),AFCOST(1,I,1),AFCOST(3,I,1)                    WREG  65
   10 CONTINUE                                                          WREG  70
      WRITE(6,160)                                                      WREG  75
      DO 20 I=1,5                                                       WREG  80
      WRITE(6,170) I,AFSCR(2,I),AFSCR(1,I),AFHC(2,I),AFCOST(2,I,2),     WREG  85
     .     AFCOST(1,I,2),AFCOST(3,I,2)                                  WREG  90
   20 CONTINUE                                                          WREG  95
      WRITE(6,180)                                                      WREG 100
      DO 30 I=1,3                                                       WREG 105
      WRITE(6,190) I,AFSCD(2,I),AFSCD(1,I),AFHC(3,I),AFCOST(2,I,3),     WREG 110
     .     AFCOST(1,I,3),AFCOST(3,I,3)                                  WREG 115
   30 CONTINUE                                                          WREG 120
      WRITE(6,200) AFSCG,AFHC(4,1),AFCOST(2,1,4),AFCOST(1,1,4),         WREG 125
     .     AFCOST(3,1,4)                                                WREG 130
      WRITE(6,210)                                                      WREG 135
      WRITE(6,215)                                                      WREG 140
      WRITE(6,220) ((SLIM(I,J),J=1,3),I=1,3)                            WREG 145
  100 FORMAT(' ',T59,'REGIONAL DATA',T21,'REGION:  ',5A4,T105,'DATE:  ',WREG 150
     .     5A4/)                                                        WREG 155
  110 FORMAT(' ',T27,'LABOR COST ($/HR) = ',F4.2,T54,'WATER COST ($/GA',WREG 160
     .    T70,'L) = ',E8.1,T86,'INTEREST RATE (%) = ',F4.1/)            WREG 165
  120 FORMAT('+',T9,'ELEC COST PW PLNT ($/KWH) = ',E10.3,T50,           WREG 170
     .    'ELEC COST INDUST ($/KWH) = ',E10.3,T89,                      WREG 175
     .    'ELEC COST COMM  ($/KWH) = ',E10.3/)                          WREG 180
  130 FORMAT(' ',T59,'FUEL DATA TABLE'/,' ',T45,'%SULF CONT   HEAT CON',WREG 185
     .    T66,'T     %ASH',T85,'FUEL COST ($/UNIT)'/,' ',T28,'FUEL',T38,WREG 190
     .    'GRADE    MAX  MIN   (BTU/UNIT)    COAT    PWR PLNT',T91,    WREG 195
     .    'INDUST     COMM')                                           WREG 200
  135 FORMAT('+',T26,'_____',3X,'_____',T46,2('____',1X),2X,            WREG 205
     . 10('_'),4X,'____',T80,3(8('_'),2X)/)                             WREG 210
  140 FORMAT(' ',T26,'COAL')                                            WREG 215
  150 FORMAT('+',T39,I1,T45,F4.1,2X,F4.1,3X,E10.3,3XF4.1,4X,3(E9.2,1X)/)WREG 220
  160 FORMAT(' ',T26,'RESID OIL')                                       WREG 225
  170 FORMAT('+',T39,I1,T45,F4.1,2X,F4.1,3X,E10.3,11X3(E9.2,1X)/)       WREG 230
  180 FORMAT(' ',T26,'DIST OIL')                                        WREG 235
  190 FORMAT('+',T39,I1,T45,F4.1,2X,F4.1,3X,E10.3,11X3(E9.2,1X)/)       WREG 240
  200 FORMAT(' ',T26,'GAS',T39,'1',T45,F4.1,9X,E10.3,11X,               WREG 245

     .    3(E9.2,1X)/)                                                 WREG 250
  210 FORMAT('0',T48,'MAXIMUM ALLOWABLE SULFUR CONTENT (%)'/,' ',T66,   WREG 255
     .    'DEVICE NO'/' ',T53,'FUEL        30     31     32')          WREG 260
  215 FORMAT('+',T51,8('_'),T63,3(4('_'),2X)/)                          WREG 265
  220 FORMAT(' ',T51,'COAL',T63,3(F4.1,2X)/' ',T51,'RESID OIL',T63,     WREG 270
     .    3(F4.1,2X)/' ',T51,'DIST OIL',T63,3(F4.1,2X)/)                WREG 275
      RETURN                                                            WREG 280
      END                                                               WREG 285
```

SUBPROGRAM WDEVR

PURPOSE

The subprogram WDEVR prints the present and input (if any) device data.

CALLING SEQUENCE

Call WDEVR (DAT)

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Device data (PRINTER)

PROCEDURE

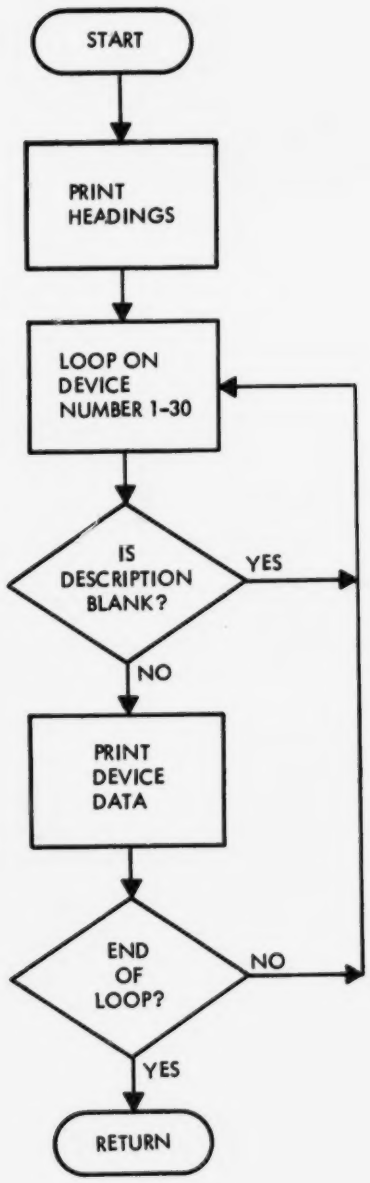
1. Print headings
2. Print device data for each device with a non-blank descriptive field.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

DAT	Date of run input via cards.
REGRO	Common block containing regional data (Refer to MAIN for a description of each variable)
DEVICE	Common block containing device data (Refer to MAIN for a description of each variable)


START
PRINT HEADINGS
LOOP ON DEVICE NUMBER 1-30
IS DESCRIPTION BLANK?
YES
NO
PRINT DEVICE DATA
END OF LOOP?
NO
YES
RETURN

```
      SUBROUTINE WDEVR(DAT)                                                 WDEV    0
      DIMENSION DAT(5)                                                      WDEV    5
      COMMON/REGRO/ IREGR,DUMM(131),RNAM(5)                                 WDEV   10
      COMMON/DEVICE/IREGD(50),IDDEV(50),DEVNAM(6,50),XMP1(50),XMP2(50),     WDEV   15
     .    XMP3(50),CINCST(50),FLF(50),PRDROP(50),QLAB(4,50),CATS(50),       WDEV   20
     .    DCOC(2,50),DFUELF(50),REFFSO(50),REFFPT(50)                       WDEV   25
      DATA ABLK /'    '/                                                    WDEV   30
      WRITE(6,100) RNAM,DAT                                                 WDEV   35
      WRITE(6,110)                                                          WDEV   40
      DO 10 I=1,50                                                          WDEV   45
      IF(DEVNAM(1,I) .EQ. ABLK) GO TO 10                                    WDEV   50
      REF1 = REFFSO(I) * 100.                                               WDEV   55
      REF2 = REFFPT(I) * 100.                                               WDEV   60
      IFLF= FLF(I)                                                          WDEV   65
      IPRD= PRDROP(I)                                                       WDEV   70
      WRITE(6,120) IDDEV(I),(DEVNAM(J,I),J=1,6),REF1,REF2,                  WDEV   75
     .    XMP1(I),XMP2(I),XMP3(I),CINCST(I),CATS(I),(DCOC(K,I),K=1,2),      WDEV   80
     .   (QLAB(L,I),L=1,4),IFLF,IPRD,DFUELF(I)                              WDEV   85
   10 CONTINUE                                                              WDEV   90
  100 FORMAT('1',T59,'DEVICE DATA',T21,'REGION:  ',5A4,T105,'DATE:  ',      WDEV   95
     .    5A4/)                                                             WDEV  100
  110 FORMAT(' ',T33,'RATED EFF',T47,'MANUFACTURERS PRICE COEFF',T77,       WDEV  105
     .   'INST CHEM  DISP COST    LABOR QUANTITY      DEV PRS FUEL'/ ' 'WDEV  110
     .    T4,' ID',T13,'DEVICE NAME',T34,'SO2 PART', T48,'1',T59,'2',       WDEV  115
     .    T70,'3',T77,'FACT COST   SO2  PART  SML  MED  LGE  X-LG',        WDEV  120
     .  T121,'LFE',                                                         WDEV  125
     .    T125,'DRP FACT'/,'+',T4,'___',T8,24('_'),T33,'____ ____',T44,     WDEV  130
     .   3('__________ '),T77,2('____ '),T87,2('_____ '),T100,              WDEV  135
     . 4('____ '),T121,                                                     WDEV  140
     .   '___ ___ ____'//)                                                  WDEV  145
  120 FORMAT('+',T4,I3,1X,6A4,1X,F4.1,1X,F4.1,2X,3(E10.3,1X),F4.2,1X,       WDEV  150
     .    F4.1,1X,F5.1,1X,F5.1,2X,4(F4.2,1X),2X,I2,2X,I2,1X,                WDEV  155
     .    F4.2/)                                                            WDEV  160
      RETURN                                                                WDEV  165
      END                                                                   WDEV  170
```

SUBPROGRAM DEVAPL

PURPOSE

The subprogram DEVAPL reads and prints the namelist data for the device applicability table, and returns a flag which indicates if the device is applicable to the source.

CALLING SEQUENCE

CALL DEVAPL (ISIC, IPRC, IDEV, INAM, IAC, DAT)

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

Device Applicability Name List (CARD READER)

OUTPUT

Device Applicability Namelist (PRINTER)

PROCEDURE

1. Read Namelist data if input and store in appropriate positions of device applicability table.
2. Call WDEVAR to print data.
3. If source is a combustion source, find the device applicability flag by setting the index L = IPRC/10+1.
4. For non-combustion sources, search the table for a matching SIC and process code.
5. If no match is found, print Error message.

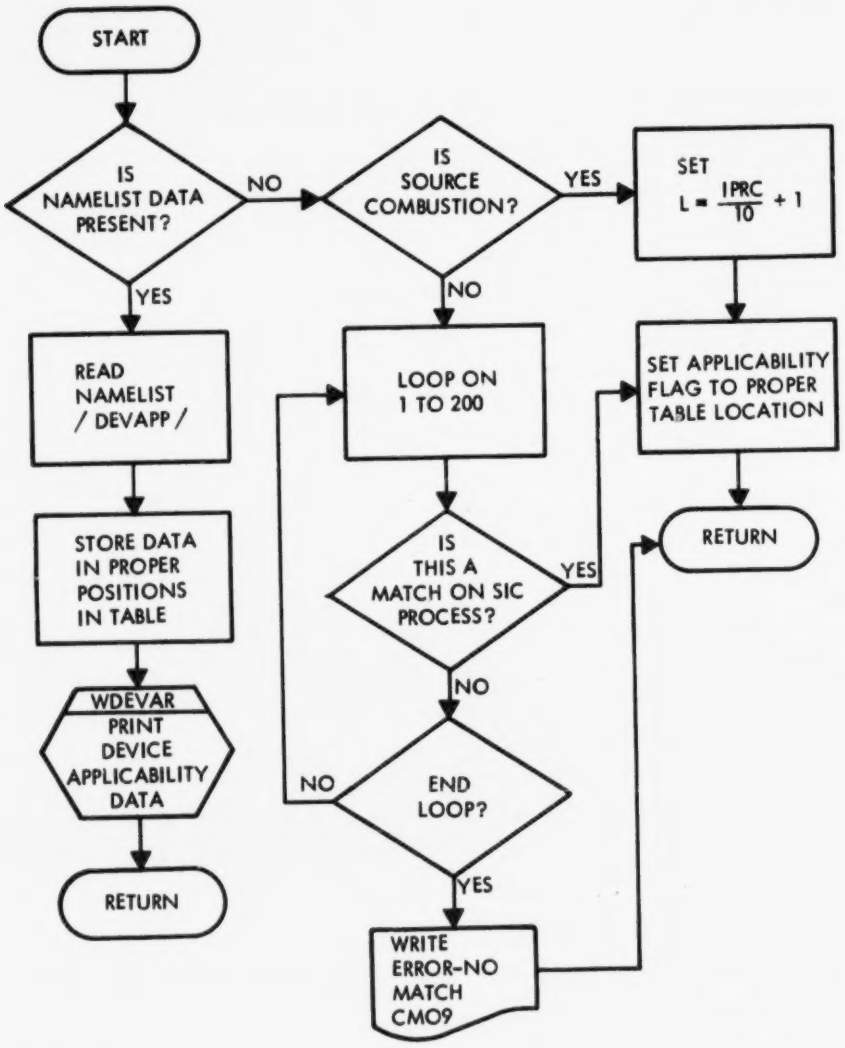
SUBROUTINES

WDEVAR - The subprogram prints the namelist data for the device applicability table.

INPUT/OUTPUT VARIABLES

ISIC	SIC number of the current source.
IPRC	Process code of the current source.
IDEV	Device number which is being applied to the current source.
INAM	Flag indicating presence of namelist data, 0 - no data; 1 - namelist data should be read.

IAC	Flag indicating applicable devices; 0 - device is not applicable; 1 - device is applicable.
DAT	Run date
DEVARO	Common block containing the namelist inputs for the device applicability table (refer to MAIN for a description of each variable)
CDEVAP	Common block containing the preset device applicability data (Refer to BLK DATA for description of each variable)


START
IS NAMELIST DATA PRESENT?
NO
IS SOURCE COMBUSTION?
YES
SET L = IPRC/10 + 1
YES
READ NAMELIST / DEVAPP /
NO
LOOP ON 1 TO 200
SET APPLICABILITY FLAG TO PROPER TABLE LOCATION
STORE DATA IN PROPER POSITIONS IN TABLE
IS THIS A MATCH ON SIC PROCESS?
YES
RETURN
WDEVAR PRINT DEVICE APPLICABILITY DATA
NO
END LOOP?
NO
YES
RETURN
WRITE ERROR-NO MATCH CM09

```
      SUBROUTINE DEVAPL( ISIC,IPRC,IDEV,INAM,IAC,DAT)                    DEVA   0
C                                                                        DEVA   5
C     THE NAMELIST INPUTS ARE STORED UNDER THE LAST FIVE POSITIONS IN    DEVA  10
C         THE TABLE (I.E. 196 -200). CURRENTLY POSITIONS 1-177 ARE       DEVA  15
C         PRESET.                                                        DEVA  20
C                                                                        DEVA  25
      DIMENSION DAT(5)                                                   DEVA  30
      DIMENSION ISIN(5),IPRN(5),IORN(50,5)                               DEVA  35
      COMMON/DEVARO/ ISIN,IPRN,IORN                                      DEVA  40
      COMMON/CDEVAP/MAT(200),IORF(50,200)                                DEVA  45
      NAMELIST/DEVAPP/ ISIN,IPRN,IORN                                    DEVA  50
      ICONA(IISIC,IIPRC) = IISIC *100 + IIPRC                            DEVA  55
C                                                                        DEVA  60
C     DETERMINE IF THERE IS NAMELIST DATA                                DEVA  65
      IAC = 0                                                            DEVA  70
      IF(INAM.EQ. 0)  GO TO 200                                          DEVA  75
      INAM=0                                                             DEVA  80
      READ(5,DEVAPP)                                                     DEVA. 85
      DO 60 I = 1,5                                                      DEVA  90
      L = 195+I                                                          DEVA  95
      MAT(L)       = ICONA(ISIN(I),IPRN(I))                              DEVA 100
      DO 50 J =1,50                                                      DEVA 105
   50 IORF(J,L) = IORN(J,I)                                              DEVA 110
   60 CONTINUE                                                           DEVA 115
      CALL WDEVAR(DAT)                                                   DEVA 120
      GO TO 700                                                          DEVA 125
C                                                                        DEVA 130
C     DETERMINE IF THE PROCESS IS COMBUSTION, IF SO USE COMBUSTION       DEVA 135
C         SEA CH, ELSE FIND A MATCH FOR THE SIC AND PROCESS, PICK        DEVA 140
C         OUT APPLICABILITY FLAG.                                        DEVA 145
C                                                                        DEVA 150
  200 IF(MOD(IPRC,10).EQ.0) GO TO 500                                    DEVA 155
C                                                                        DEVA 160
C     FIND A MATCH FOR THE SOURCE IN THE DEVICE APPLICABILITY TABLE      DEVA 165
      ISIR   = ICONA(ISIC,IPRC)                                          DEVA 170
      DO 300 I= 1,200 ,                                                  DEVA 175
      L = I                                                              DEVA 180
      IF (MAT(L).EQ. ISIR) GO TO 600                                     DEVA 185
  300 CONTINUE                                                           DEVA 190
      WRITE(6,310) ISIC,IPRC                                             DEVA 195
  310 FORMAT('0',4X,'CM09 - THE SIC AND PROCESS CODE '14,2X,I2,          DEVA 200
     . ' ARE NOT IN THE DEVICE APPLICABILITY TABLE.'/)                   DEVA 205
      RETURN                                                             DEVA 210
C     SET UP L INDEX FOR COMBUSTION SOURCES                              DEVA 215
C                                                                        DEVA 220
  500 L = IPRC/10 + 1                                                    DEVA 225
C                                                                        DEVA 230
  600 IAC = IORF(IDEV,L)                                                 DEVA 235
  700 CONTINUE                                                           DEVA 240
      RETURN                                                             DEVA 245
      END                                                                DEVA 250
```

SUBPROGRAM WDEVAR

PURPOSE

The subprogram WDEVAR prints the device applicability data input via namelist.

CALLING SEQUENCE

CALL WDEVAR (DAT)

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Device Applicability Namelist Data (PRINTER)

PROCEDURE

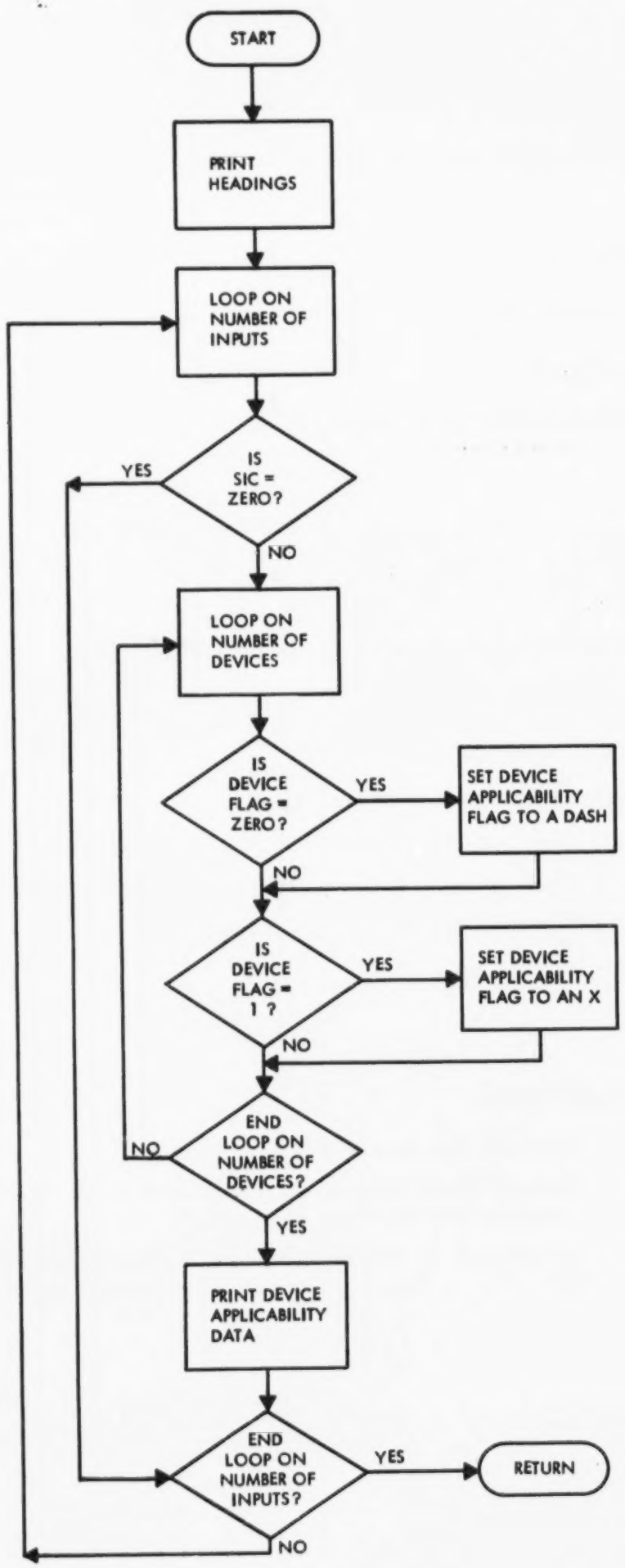
1. Print headings.
2. Determine the SIC which were input.
3. Move dash to the Print position of the devices which are not applicable.
4. Move an X to the Print position of the devices which are applicable.
5. Print device applicability data.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

DAT	Date of run input via cards.
REGRO	Common block containing regional data (Refer to MAIN for a description of each variable.)
DEVARO	Common block containing the device applicability data (Refer to MAIN for a description of each variable.)


START
PRINT HEADINGS
LOOP ON NUMBER OF INPUTS
IS SIC = ZERO?
YES
NO
LOOP ON NUMBER OF DEVICES
IS DEVICE FLAG = ZERO?
YES
SET DEVICE APPLICABILITY FLAG TO A DASH
NO
IS DEVICE FLAG = 1 ?
YES
SET DEVICE APPLICABILITY FLAG TO AN X
NO
END LOOP ON NUMBER OF DEVICES?
NO
YES
PRINT DEVICE APPLICABILITY DATA
END LOOP ON NUMBER OF INPUTS?
YES
RETURN
NO

```
      SUBROUTINE WDEVAR(DAT)                                                WDVR   0
      INTEGER*2 IXOD,DAS,XXS                                                WDVR   5
      DATA DAS/'--'/,XXS/'XX'/                                              WDVR  10
      DIMENSION DAT(5),IXOD(50)                                             WDVR  15
      COMMON/DEVARD/ ISIN(5),IPRN(5),IORN(50,5)                             WDVR  20
      COMMON/REGRD/ DUMM(132),RNAM(5)                                       WDVR  25
      WRITE(6,100) RNAM,DAT                                                 WDVR  30
      WRITE(6,105)                                                          WDVR  35
  105 FORMAT('+',T50,'DEVICE IDENTIFICATION NUMBERS'//)                     WDVR  40
      WRITE(6,110)                                                          WDVR  45
      WRITE(6,115)                                                          WDVR  50
      DO 10 I=1,5                                                           WDVR  55
      [redacted]IF(ISIN(I).LT.1000.OR.ISIA(I).GT.9999)                      WDVR  60
                                                  GO TO 10                  WDVR  65
      DO 5 K=1,50                                                           WDVR  70
      IF(IORN(K,I).EQ. 0) IXOD(K) =DAS                                      WDVR  75
      IF(IORN(K,I).EQ. 1) IXOD(K) =XXS                                      WDVR  80
    5 CONTINUE                                                              WDVR  85
      WRITE(6,120) ISIN(I),IPRN(I),(IXOD(J),J=1,25)                         WDVR  90
      WRITE(6,130) (IXOD(J),J=26,50)                                        WDVR  95
   10 CONTINUE                                                              WDVR 100
  100 FORMAT('1',T43,'DEVICE APPLICATION CRITERIA FOR NEW SOURCE TYPES',    WDVR 105
     .    //'+',T22,'REGION:  ',5A4,T85,'DATE:  ',5A4//)                   WDVR 110
  110 FORMAT('+',T38,'1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 '      WDVR 115
     .    T85,'17 18 19 20 21 22 23 24 25'/,' ',T22,'SIC     PROC',T37,     WDVR 120
     .    '26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 '      WDVR 125
     .    T94,'45 46 47 48 49 50')                                         WDVR 130
  115 FORMAT('+',T22,'____',T36,'____',T37,74('_')/)                        WDVR 135
  120 FORMAT(' ',T22,I4,T31,I2,T38,25(A1,2X)/)                              WDVR 140
  130 FORMAT('+',T38,25(A1,2X)/)                                            WDVR 145
      RETURN                                                                WDVR 150
      END                                                                   WDVR 155
```

SUBPROGRAM WSOUR

PURPOSE

The subprogram WSOUR prints the control cost data which is composed of source file information and cost and control effectiveness data calculated for each device applied to a source.

CALLING SEQUENCE

CALL WSOUR (DAT)

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Control Cost Data (PRINTER)

PROCEDURE

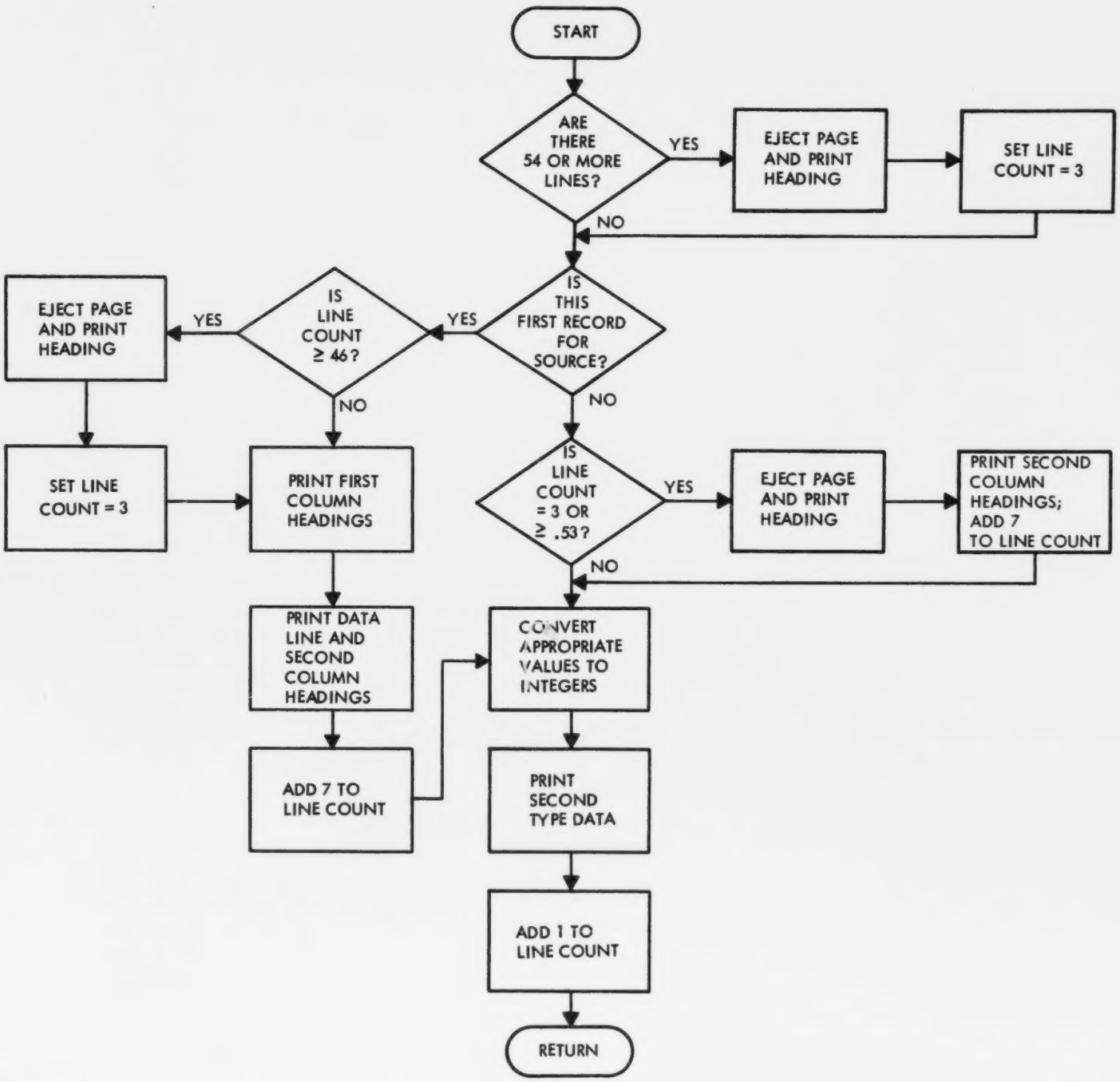
1. Determine if page should be ejected, if so, eject page and print heading.
2. Determine if the first record for this source is to be printed, if so, print first column headings, data, and second group of column headings, if these outputs cannot be put on the current page, eject page and print all the headings and data on the new page.
3. Determine if the page should be ejected before printing the second line data, if so, eject page, print headings, second line of column headings, and data.
4. Print first line data.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

DAT	Date of run input via cards.
REGRO	Common block containing regional data (Refer to MAIN for a description of each variable).
SOURCO	Common block containing source, cost, and control effectiveness data (Refer to MAIN for a description of each variable.)


START
ARE THERE 54 OR MORE LINES?
YES
EJECT PAGE AND PRINT HEADING
SET LINE COUNT = 3
NO
IS THIS FIRST RECORD FOR SOURCE?
YES
IS LINE COUNT ≥ 46?
YES
EJECT PAGE AND PRINT HEADING
SET LINE COUNT = 3
NO
PRINT FIRST COLUMN HEADINGS
NO
IS LINE COUNT = 3 OR ≥ .53?
YES
EJECT PAGE AND PRINT HEADING
PRINT SECOND COLUMN HEADINGS; ADD 7 TO LINE COUNT
NO
PRINT DATA LINE AND SECOND COLUMN HEADINGS
ADD 7 TO LINE COUNT
CONVERT APPROPRIATE VALUES TO INTEGERS
PRINT SECOND TYPE DATA
ADD 1 TO LINE COUNT
RETURN

```
      SUBROUTINE WSOUR(DAT)                                                 WSOU   0
      DIMENSION DAT(5)                                                      WSOU   5
      COMMON/SOURCO/ISIC,ISIT,IPRC,IPCL,PRTYPE,EMRAT(2),CONEFF(2),          WSOU  10
     .    GENCAP,OFHC(4),PRCRTM,SHIFTS,OUSEF,PLUME,IDX,DEVEFF(2),TEXN,      WSOU  15
     .   ACFMN,TAC,AMTR(4),IGAS,CER(2),ILIN,SXOM                            WSOU  20
      COMMON/PEGRO/DUMM(132),RNAM(5)                                        WSOU  25
      IF(ILIN .GE. 54) GO TO 500                                            WSOU  30
  100 IF(IDX .EQ. 0) GO TO 600                                              WSOU  35
      IF((ILIN.GE. 53).OR.(ILIN.EQ. 3)) GO TO 700                           WSOU  40
  200 ITEXN  = TEXN                                                         WSOU  45
      IACFMN = ACFMN                                                        WSOU  50
      ITAC = TAC                                                            WSOU  55
      ISXOM = SXOM                                                          WSOU  60
      IF(IDX.GE.27.AND.IDX.LE.32) ISXOM = ITAC                              WSOU  65
      ICER1 = CER(1)                                                        WSOU  70
      ICER2 =  CER(2)                                                       WSOU  75
      IAMTR1 = AMTR(1)                                                      WSOU  80
      IAMTR2 = AMTR(2)                                                      WSOU  85
      IAMTR3 = AMTR(3)                                                      WSOU  90
      IAMTR4 = AMTR(4)                                                      WSOU  95
      DEV1 = DEVEFF(1) * 100.                                               WSOU 100
      DEV2 = DEVEFF(2) * 100.                                               WSOU 105
      WRITE(6,1000) IDX,DEV1,DEV2,ITEXN,IACFMN,ITAC,ISXOM,ICER1,ICER2,      WSOU 110
     . IAMTR1,IAMTR2,IAMTR3,IAMTR4,IGAS                                     WSOU 115
      SXOM = 0.0                                                            WSOU 120
      ILIN = ILIN +1                                                        WSOU 125
      GO TO 3000                                                            WSOU 130
  500 WRITE(6,1100) RNAM,DAT                                                WSOU 135
      ILIN = 7                                                              WSOU 140
      GO TO 100                                                             WSOU 145
  600 IF(ILIN.GE.46) GO TO 800                                              WSOU 150
  650 WRITE(6,1200)                                                         WSOU 155
      CON1 = CONEFF(1) * 100.                                               WSOU 160
      CON2 = CONEFF(2) * 100.                                               WSOU 165
      ISOR = ISIC*100000 + ISIT*100 + IPRC                                  WSOU 170
      IPLUME = PLUME                                                        WSOU 175
      WRITE(6,1300) ISOR,PRTYPE,IPOL,EMRAT,CON1,CON2,GENCAP,                WSOU 180
     .   PRCRTM,SHIFTS,OFHC,OUSEF,IPLUME                                    WSOU 185
      WRITE(6,1400)                                                         WSOU 190
      ILIN = ILIN + 7                                                       WSOU 195
      GO TO 200                                                             WSOU 200
  700 WRITE(6,1100) RNAM,DAT                                                WSOU 205
      WRITE(6,1400)                                                         WSOU 210
      ILIN = 6                                                              WSOU 215
      GO TO 200                                                             WSOU 220
  800 WRITE(6,1100) RNAM,DAT                                                WSOU 225
      ILIN = 3                                                              WSOU 230
      GO TO 650                                                             WSOU 235
 3000 CONTINUE                                                              WSOU 240
 1000 FORMAT('+',T12,I3,2X,F6.1,1X,F6.1,3X,I4,3X,I8,1X,I10,2X,I8,3X,I6,     WSOU 245
```

```
     .    4X,I6,2X,I7,3X,I8,2X,I8,1X,I10,2X,I1/)                          WSOU 250
1100 FORMAT('1',T57,'CONTROL COST DATA',T21,'REGION:  ',5A4,T105,          WSOU 255
     .    'DATE:  ',5A4//)                                                WSOU 260
1200 FORMAT(' ',T3,'SOURCE ID TYP PJ SC2EMRT  PRTEMRT  SO2EF PRTEF    ',WSOU 265
     .  T52,'PATCAP   MX PROC RATE SHFT COAL HEAT  R OIL HEAT',          WSOU 270
     .  T101,'D OIL HEAT',                                               WSOU 275
     .  T113,'GAS HEAT  UFCT PLM'/'+',T3,9('_'),1X,'___',1X,'__',1X,     WSOU 280
     .  2(8('_'),1X),2(5('_'),1X),10('_'),1X,12('_'),1X,'____',1X,       WSOU 285
     .  3(10('_'),1X),1X,9('_'),1X,'_',2('___',1X)/)                     WSOU 290
1300 FORMAT(' ',T3,I9,2X,A1,2X,I2,1X,2(F8.3,1X),2(F4.1,2X),E10.2,        WSOU 295
     .    2X,E11.2,1X,F3.1,3X,3(E9.2,2X),E9.2,1X,F4.2,1X,I4/)             WSOU 300
1400 FORMAT(' ',T19,'SO2    PRT    STK    EXHAUST',T91,'COAL',T101,      WSOU 305
     .   'R OIL',T111,'D OIL',T122,'GAS',T72,'SO2',T82,'PRT'/,' ',       WSOU 310
     . T12, 'DEV  EFF(%) EFF(%) TMP(K) VOL(ACFM) TA COST($)',            WSOU 315
     . T58, ' OM COST($) EFC($/T)  EFC($/T) UTL(T/D)  ',2('UTL(G/D)',2X)WSOU 320
     .  ,'UTL(CF/D) FLG'/'+',T12,'___',T17,3(6('_'),1X),9('_'),1X,       WSOU 325
     .  10('_'),1X,10('_'),1X,8('_'),2X,8('_'),1X,3(8('_'),2X),9('_'),   WSOU 330
     .  1X,'___'/)                                                       WSOU 335
      RETURN                                                             WSOU 340
      END                                                                WSOU 345
```

SUBPROGRAM EXDEVC

PURPOSE

The subprogram EXDEVC calculates a corrected control efficiency for particulate emissions if the source has an existing control device which is a particulate collector (i.e., wet scrubbers, dry cyclones, and electrostatic precipitators).

CALLING SEQUENCE

CALL EXDEVC (IDCE, FFF, EFAC)

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

None

PROCEDURE

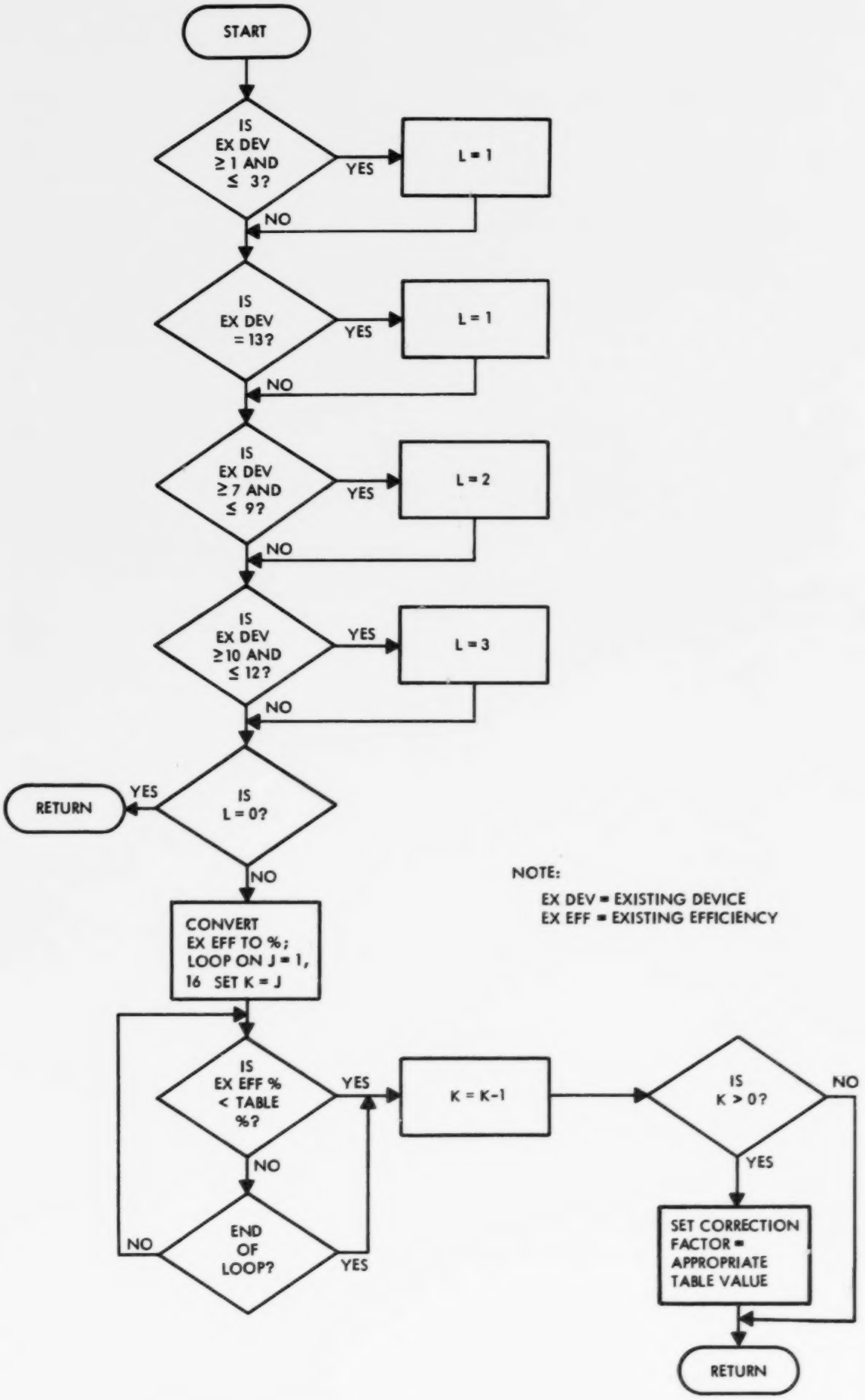
1. Set index for correction factor table depending on existing device.
2. Determine the percentage range for the existing device.
3. Set correction factor equal to appropriate table value.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

ICDE	Existing control device
FFF	Existing control efficiency
EFAC	Correction factor


START
IS EX DEV ≥ 1 AND ≤ 3?
YES
L = 1
NO
IS EX DEV = 13?
YES
L = 1
NO
IS EX DEV ≥ 7 AND ≤ 9?
YES
L = 2
NO
IS EX DEV ≥ 10 AND ≤ 12?
YES
L = 3
NO
IS L = 0?
YES
RETURN
NO
CONVERT EX EFF TO %; LOOP ON J = 1, 16 SET K = J
IS EX EFF % < TABLE %?
YES
K = K-1
IS K > 0?
NO
YES
SET CORRECTION FACTOR = APPROPRIATE TABLE VALUE
NO
END OF LOOP?
YES
NO
RETURN
NOTE:
EX DEV = EXISTING DEVICE
EX EFF = EXISTING EFFICIENCY

```
      SUBROUTINE EXDEVC (ICDE,FFF,EFAC)                                 EXDE   0
C                                                                       EXDE   5
C     L=1   WET COLLECTOR                                               EXDE  10
C     L=2   CYCLONE                                                     EXDE  15
C     L=3   PRECIPITATOR                                                EXDE  20
C                                                                       EXDE  25
      DIMENSION ECORF(15,3),ECHK(16)                                    EXDE  30
C                                                                       EXDE  35
      DATA ECHK                                                         EXDE  40
     .  / 40.,60.,65.,70.,75.,80.,83.,86.,89.,91.,93.,95.,97.,99.,100./ EXDE  45
      DATA ECORF                                                        EXDE  50
     .  / 1.0,1.1,1.2,1.3,1.5,1.8,2.2,2.6,3.1,3.5,4.1,4.7,5.5,7.3,10.0, EXDE  55
     .    1.0,1.3,1.8,2.3,2.7,3.2,3.8,4.4,5.1,5.8,6.6,7.6,9.0,11.,12.0, EXDE  60
     .    1.0,1.0,1.1,1.2,1.3,1.6,2.0,2.5,2.9,3.4,3.9,4.4,5.4,7.5,11.0/ EXDE  65
C                                                                       EXDE  70
      EFAC=1.                                                           EXDE  75
      L=0                                                               EXDE  80
      IF ((ICDE.GE.001).AND.(ICDE.LE.003)) L=1                          EXDE  85
      IF (ICDE.EQ.013) L=1                                              EXDE  90
      IF ((ICDE.GE.007).AND.(ICDE.LE.009)) L=2                          EXDE  95
      IF ((ICDE.GE.010).AND.(ICDE.LE.012)) L=3                          EXDE 100
      IF (L.EQ.0) RETURN                                                EXDE 105
      EFF=100.*FFF                                                      EXDE 110
      DO 2200 J=1,15                                                    EXDE 115
      K=J                                                               EXDE 120
      IF (EFF.LE.ECHK(K)) GO TO 2400                                    EXDE 125
 2200 CONTINUE                                                          EXDE 130
C                                                                       EXDE 135
 2400 CONTINUE                                                          EXDE 140
      EFAC=ECORF(K,L)                                                   EXDE 145
      RETURN                                                            EXDE 150
      END                                                               EXDE 155
```

SUBPROGRAM BLK DATA

PURPOSE

The BLK DATA subprogram is used to preset the device and device applicability data.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT/OUTPUT VARIABLES

DEVICE	Common block containing the device data. (Refer to MAIN for a description of each variable).
CDEVAP	Common block containing the device applicability data.
MAT	The SIC number and process codes (one #).
IORF	The 50 flags indicating the device applicability for the 200 SIC process code combinations.

```
 BLOCK DATA                                                                    BLOC    0
 DIMENSION AFCOST(3,5,4),AFSCC(2,5),AFSCR(2,5),AFSCD(2,5),                     BLOC    5
.    AFHC(4,5),SLIM(3,3),AFAC(5),ELCS(3)                                       BLOC   10
 COMMON/DEVICE/IREGD(50),IDDEV(50),DEVNAM(6,50),XMP1(50),XMP2(50),             BLOC   15
.    XMP3(50),CINCST(50),FLF(50),                                              BLOC   20
.    PRDROP(50),QLAB(4,50),CATS(50),DCOC(2,50),DFUELF(50),                     BLOC   25
.    REFFSO(50),REFFPT(50)                                                     BLOC   30
 COMMON/CDEVAP/MAT(200),IORF(50,200)                                           BLOC   35
 COMMON /REGRO/ IREGR,XLHR,RATE,ELCS,FLIQS,AFCOST,AFSCC,AFSCR,                 BLOC   40
.    AFSCD,AFSCG,AFHC,SLIM,AFAC,RNAM(5)                                        BLOC   45
 DIMENSION DEVN1(6,19),DEVN2(6,19),DEVN3(6,12)                                 BLOC   50
 EQUIVALENCE (DEVN1,DEVNAM),(DEVN2,DEVNAM(1,20)),                              BLOC   55
.  (DEVN3,DEVNAM(1,39))                                                        BLOC   60
 DIMENSION IMAT(171),JMAT(29),          IORF2(50,19),IORF3(50,19),             BLOC   65
.    IORF4(50,19),IORF5(50,18),IORF6(50,19),IORF7(50,19),                      BLOC   70
.    IORF8(50,17),IORF9(50,19),IORF10(50,19),IORF11(50,19),                    BLOC   75
.    IORF12(50,8),IORF1(50,2)                                                  BLOC   80
 EQUIVALENCE (IMAT,MAT),(JMAT,MAT(172))                                        BLOC   85
 EQUIVALENCE (IORF1,IORF(1,1)), (IORF2,IORF(1,3)),                             BLOC   90
.  (IORF3,IORF(1,22)),(IORF4,IORF(1,41)),(IORF5,IORF(1,60)),                   BLOC   95
.  (IORF6,IORF(1,78)),(IORF7,IORF(1,97)),(IORF8,IORF(1,116)),                  BLOC  100
.  (IORF9,IORF(1,133)),(IORF10,IORF(1,152)),(IORF11,IORF(1,171)),              BLOC  105
.  (IORF12,IORF(1,190))                                                        BLOC  110
 DATA IREGR/0/,XLHR/0./,ELCS/3*0./,FLIQS/0./,                                  BLOC  115
.    AFCOST/60*0./,AFSCC/10*0./,AFSCR/10*0./,AFSCD/10*0./,                     BLOC  120
.   AFSCG/0./,AFHC/20*0./,SLIM/9*0./,AFAC/5*0./,RNAM/5*0./                     BLOC  125
 DATA DEVN1                                                                    BLOC  130
X/'WET ','SCRU','BBER',' HI ','EFFI','C   ',                                   BLOC  135
X 'WET ','SCRU','BBER',' MED',' EFF','IC  ',                                   BLOC  140
X 'WET ','SCRU','BBER',' LO ','EFFI','C   ',                                   BLOC  145
X 'GRAV',' COL','LECT','OR H','I EF','FIC ',                                   BLOC  150
X 'GRAV',' COL','LECT','OR M','ED E','FFIC',                                   BLOC  155
X 'GRAV',' COL','LECT','OR L','O EF','FIC ',                                   BLOC  160
X 'CYCL','ONE ','HI E','FFIC','    ','    ',                                   BLOC  165
X 'CYCL','ONE ','MED ','EFFI','C   ','    ',                                   BLOC  170
X 'CYCL','ONE ','LO E','FFIC','    ','    ',                                   BLOC  175
X 'ELEC','T PR','ECIP',' HI ','EFFI','C   ',                                   BLOC  180
X 'ELEC','T PR','ECIP',' MED',' EFF','IC  ',                                   BLOC  185
X 'ELEC','T PR','ECIP',' LO ','EFFI','C   ',                                   BLOC  190
X 'GAS ','SCRU','BBER','    ','    ','    ',                                   BLOC  195
X 'MIST',' ELI','MINA','TOR ','HI V','EL  ',                                   BLOC  200
X 'MIST',' ELI','MINA','TOR ','LO V','EL  ',                                   BLOC  205
X 'FABR','IC F','ILTE','R HI',' TEM','P   ',                                   BLOC  210
X 'FABR','IC F','ILTE','R ME','D TE','MP  ',                                   BLOC  215
X 'FABP','IC F','ILTE','R LO',' TEM','P   ',                                   BLOC  220
X 'CATA','LYTI','C AF','TERB','URNE','R   '/                                   BLOC  225
 DATA DEVN2                                                                    BLOC  230
X/'CATA','LYTI','C AB',' WIT','H HE','    ',                                   BLOC  235
X 'DIRE','CT F','LAME',' AFT','ERBU','RNER',                                   BLOC  240
X 'DIRE','CT F','LAME',' AB ','WITH',' HE ',                                   BLOC  245
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X '    ','    ','    ','    ','    ','    ',                                  BLOC 250
X '    ','    ','    ','    ','    ','    ',                                  BLOC 255
X '    ','    ','    ','    ','    ','    ',                                  BLOC 260
X '    ','    ','    ','    ','    ','    ',                                  BLOC 265
X 'ELIM','INAT','E CO','AL  ','    ','    ',                                  BLOC 270
X 'ELIM','INAT','E CO','AL A','ND R','OIL',                                   BLOC 275
X 'SWIT','CH T','O GA','S   ','    ','    ',                                  BLOC 280
X 'SULF','UR L','IMIT','ATIO','N 1 ','    ',                                  BLOC 285
X 'SULF','UR L','IMIT','ATIO','N 2 ','    ',                                  BLOC 290
X 'SULF','UR L','IMIT','ATIO','N 3 ','    ',                                  BLOC 295
X '    ','    ','    ','    ','    ','    ',                                  BLOC 300
X '    ','    ','    ','    ','    ','    ',                                  BLOC 305
X '    ','    ','    ','    ','    ','    ',                                  BLOC 310
X '    ','    ','    ','    ','    ','    ',                                  BLOC 315
X '    ','    ','    ','    ','    ','    ',                                  BLOC 320
X '    ','    ','    ','    ','    ','    '/                                  BLOC 325
 DATA DEVN3                                                                   BLOC 330
X/'CATA','LYTI','C OX','YDAT','ION ','    ',                                  BLOC 335
X '    ','    ','    ','    ','    ','    ',                                  BLOC 340
X 'DRY ','LIME','STON','E IN','JECT','ION ',                                  BLOC 345
X 'WET ','LIME','STON','E IN','JECT','ION ',                                  BLOC 350
X 'H250','4 PL','ANT-','CONT','ACT ','    ',                                  BLOC 355
X 'H250','4 PL','ANT-','2 CO','NTAC','T   ',                                  BLOC 360
X 'SULF','UR P','LANT','    ','    ','    ',                                  BLOC 365
X '    ','    ','    ','    ','    ','    ',                                  BLOC 370
X '    ','    ','    ','    ','    ','    ',                                  BLOC 375
X '    ','    ','    ','    ','    ','    ',                                  BLOC 380
X '    ','    ','    ','    ','    ','    ',                                  BLOC 385
X '    ','    ','    ','    ','    ','    '/                                  BLOC 390
 DATA IDDEV                                                                   BLOC 395
X/001,002,003,004,005,006,007,008,009,010,011,012,013,014,015,016,0BLOC 400
X17,018,019,020,021,022,023,024,025,026,027,028,029,030,031,032,033BLOC 405
X,034,035,036,037,038,039,040,041,042,043,044,045,046,047,048,049,0BLOC 410
X50/                                                                          BLOC 415
 DATA XMP1                                                                    BLOC 420
X    /02.886,02.886,01.257,-0.445,-0.042,0.003,02.413,01.507,0.244,BLOC 425
X042.413,031.243,019.695,03.175,02.658,01.772,01.448,03.478,02.658,BLOC 430
X07.550,07.550,05.713,05.713,00.00,00.00,00.00,00.00,00.00,00.00,00BLOC 435
X.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,-012.41,BLOC 440
X00.00,00.00,1.108E-06,0.,0.00,00.00,00.00,00.00,00.00,00.00,00.00/BLOC 445
 DATA XMP2                                                                    BLOC 450
X    /0.228,0.228,0.145,0.326,0.155,0.056,0.197,0.157,0.099,0.623,08BLOC 455
X.441,0.318,0.251,0.325,0.217,0.838,0.448,0.325,1.515,1.515,1.174,18BLOC 460
X.174,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,08BLOC 465
X0.00,00.00,00.00,00.00,00.00,00.00,01.67,      0.0,09.95E-07,04.81BLOC 470
XE-17,00.80,00.80,00.81,00.00,00.00,00.00,00.00,00.00/                        BLOC 475
 DATA XMP3                                                                    BLOC 480
X    /39*00.00000000,      0.0,-6.03E-17,4*00.0/                              BLOC 485
 DATA CINCST                                                                  BLOC 490
X          /200.00,200.00,200.00,100.00,100.00,100.00,100.00,100.00,BLOC 495
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X100.00,100.00,100.00,100.00,200.00,100.00,100.00,100.00,100.00,100BLOC  500
A.00,100.00,200.00,100.00,200.00,000.00,000.00,000.00,000.00,000.00BLOC  505
X,000.00,000.00,000.00,000.00,000.00,000.00,000.00,000.00,000.00,00BLOC  510
X0.00,000.00,000.00,000.00,000.00,000.00,000.00,000.00,000.00,000.0BLOC  515
X0,000.00,000.00,000.00,000.00/                                        BLOC  520
 DATA FLF                                                              BLOC  525
X         /15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.BLOC  530
X00,15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.00,15.BLOC  535
X00,15.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00 00,00.BLOC  540
X00,00.00,00.00,00.00,00.00,00.00,00.00,15.00,00.00,15.00,15.00,20.BLOC  545
X00,20.00,20.00,00.00,00.00,00.00,00.00,00.00/                         BLOC  550
 DATA PRDROP                                                           BLOC  555
X           /20.00,04.00,03.00,00.50,00.50,00.50,04.00,03.00,02.00,0BLOC  560
X0.50,00.50,00.50,05.00,10.00,05.00,05.00,05.00,05.00,01.00,01.00,0BLOC  565
X1.00,01.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,0BLOC  570
X0.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,41.50,00.00,00.00,0BLOC  575
X0.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00,00.00/                 BLOC  580
 DATA QLAB                                                             BLOC  585
X          /0.50,1.00,2.00,4.00,.375,0.75,1.50,3.00,.375,.75,1.50,3.BLOC  590
X00,0.25,0.50,1.00,2.00,0.25,0.50,1.00,2.00,0.25,0.50,1.00,2.00,0.2BLOC  595
X5,0.50,1.00,2.00,0.25,0.50,1.00,2.00,0.25,0.50,1.00,2.00,0.50,1.50BLOC  600
X,3.00,6.00,0.50,1.50,3.00,6.00,0.50,1.50,3.00,6.00,.375,.75,1.50,3BLOC  605
X.00,0.25,0.50,1.00,2.00,0.25,0.50,1.00,2.00,0.50,1.25,2.50,5.00,0.BLOC  610
X50,1.25,2.50,5.00,0.50,1.25,2.50,5.00,0.25,0.50,1.00,2.00,0.25,0.5BLOC  615
X0,1.00,2.00,0.125,0.25,0.50,1.00,0.125,0.25,0.50,1.00,0.0,0.0,0.0,BLOC  620
X0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,BLOC  625
X0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,BLOC  630
X0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.BLOC  635
X0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,BLOC  640
X0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.BLOC  645
X0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,BLOC  650
XC.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0/                          BLOC  655
 DATA DCOC                                                             BLOC  660
X                /0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.BLOC  665
X00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,0.0,1.00,BLOC  670
X0.0,0.0,0.0,0.0,0.0,0.0,1.00,0.0,1.00,0.0,1.00,0.0,0.0,0.0,0.0,0.0BLOC  675
X,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,BLOC  680
X.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0BLOC  685
X,0.0,-27.60,0.0,0.0,0.0,0.0,0.0,0.0,0.0,-27.60,0.0,-27.60,0.0,-15.BLOC  690
X00,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0/              BLOC  695
 DATA DFUELF                                                           BLOC  700
X                /0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.BLOC  705
X,0.0,0.0,0.0,0.0,0.0,0.0,0.49,0.245,1.00,0.404,0.0,0.0,0.0,0.0,0.0,0.0BLOC  710
X,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0BLOC  715
X.0,0.0,0.0,0.0,0.0,0.0,0.0/                                           BLOC  720
 DATA REFFSO                                                           BLOC  725
X                /0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,80.BLOC  730
X00,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0BLOC  735
X,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,90.00,00.00,50.00,80.00,97.50BLOC  740
X,99.50,95.00,0.0,0.0,0.0,0.0,0.0,0.0/                                 BLOC  745
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 DATA CATS                                                              BLOC 750
X         /0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,10.0,0.0,0.0BLOC 755
X,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0BLOC 760
X.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,2.00,2.00,0.0,0.0,0.0,0.0,0BLOC 765
X.0,0.0,0.0,0.0/                                                        BLOC 770
 DATA REFFPT                                                            BLOC 775
X               /098.00,090.00,080.00,060.00,040.00,030.00,085.00,078LOC 780
X5.00,060.00,099.00,095.00,090.00,080.00,099.00,085.00,099.00,099.0BLOC 785
X0,099.00,095.00,095.00,095.00,095.00,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0BLOC 790
X.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,0.0,098.00,0.0,0.0,0.0,0.0,BLOC 795
X0.0,0.0,0.0,0.0,0.0/                                                   BLOC 800
 DATA IMAT                                                              BLOC 805
. /0,10,20,30,40,50,60,70,80,90,                                        BLOC 810
.  201101,202901,203201,203701,204101,204102,204103,204201,204202,      BLOC 815
.  204301,204601,206201,208201,209201,209501,209502,209503,             BLOC 820
.  209504,209901,229901,244501,249901,251101,262101,262102,262103,     BLOC 825
.  262104,262105,262106,264101,264201,264501,265501,266101,271101,     BLOC 830
.  274101,275101,275201,281301,281601,281602,281603,281604,281605,     BLOC 835
.  281606,281607,281901,281902,281903,281904,281905,281906,281907,     BLOC 840
.  281908,281909,281911,281912,282101,282201,283301,283401,284101,     BLOC 845
.  284201,284301,285101,285102,285103,285104,287101,289101,289201,     BLOC 850
.  289901,291101,291102,291103,291104,291105,291106,291107,291108,     BLOC 855
.  295101,295102,295103,295104,295201,299201,299901,306901,307901,     BLOC 860
.  321101,322101,324101,324102,324103,325101,325501,327101,327201,     BLOC 865
.  327301,327401,327402,328101,329101,329501,329502 329503,329701,     BLOC 870
.  331201,331202,331203,331204,331205,331206,331207,331208,331301,     BLOC 875
.  332101,332102,332103,332201,332301,332302,333201,333202,333203,     BLOC 880
.  333203,333204,333205,333401,333901,334101,334102,334103,334104,     BLOC 885
.  334105,334106,334107,334108,334109,336201,336901,336902,336903,     BLOC 890
.  336904,336905,336906,336907,336908,339101,339901,341101,344101,     BLOC 895
.  345101,345201,351901,363901,366101,495201,495301,495302,495303/     BLOC 900
 DATA JMAT                                                              BLOC 905
. /495304,495305,495306,281801,       329601,371101/                    BLOC 910
 DATA IORF1                                                             BLOC 915
. /6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                         BLOC 920
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0/                        BLOC 925
 DATA IORF2                                                             BLOC 930
. /6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                         BLOC 935
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 940
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 945
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 950
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 955
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 960
.  6*0,6*1,3*0,2*1,9*0,6*1,6*0,1*1,1*0,2*1,8*0,                        BLOC 965
.   26*0,6*1,18*0,                                                     BLOC 970
.  20*0,1*1,29*0,                                                       BLOC 975
.  20*0,1*1,29*0,                                                       BLOC 980
.  20*0,1*1,29*0,                                                       BLOC 985
.  6*0,3*1,6*0,3*1,32*0,                                                BLOC 990
.  6*0,3*1,6*0,3*1,32*0,                                                BLOC 995
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     6*0,3*1,6*0,3*1,32*0,                                              BLOC1000
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1005
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1010
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1015
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1020
     6*0,3*1,6*0,3*1,32*0                                               BLOC1025
    DATA IORF3                                                          BLOC1030
   /6*0,3*1,6*0,3*1,22*0,2*1,8*0,                                       BLOC1035
     20*0,1*1,29*0,                                                     BLOC1040
     6*0,3*1,6*0,7*1,28*0,                                              BLOC1045
     6*0,3*1,9*0,4*1,28*0,                                              BLOC1050
     6*0,3*1,9*0,4*1,28*0,                                              BLOC1055
     6*0,3*1,41*0,                                                      BLOC1060
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1065
     20*0,1*1,29*0,                                                     BLOC1070
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1075
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1080
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1085
     6*0,3*1,6*0,3*1,32*0,                                              BLOC1090
     12*0,1*1,7*0,1*1,29*0,                                             BLOC1095
     12*0,2*1,36*0,                                                     BLOC1100
     1*1,49*0,                                                          BLOC1105
     1*1,8*0,1*1,40*0,                                                  BLOC1110
     12*0,1*1,7*0,1*1,29*0,                                             BLOC1115
     12*0,1*1,7*0,1*1,29*0,                                             BLOC1120
     15*0,7*1,28*0          /                                           BLOC1125
    DATA IORF4                                                          BLOC1130
   /15*0,7*1,28*0,                                                      BLOC1135
     20*0, *1,29*0,                                                     BLOC1140
     15*0,7*1,28*0,                                                     BLOC1145
     15*0,7*1,28*0,                                                     BLOC1150
     3*1,15*0,4*1,28*0,                                                 BLOC1155
     3*1,15*0,4*1,28*0,                                                 BLOC1160
     3*1,15*0,4*1,28*0,                                                 BLOC1165
     3*1,15*0,4*1,28*0,                                                 BLOC1170
     18*0,4*1,28*0,,                                                    BLOC1175
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1180
     3*1,47*0,                                                          BLOC1185
     3*1,47*0,                                                          BLOC1190
     3*1,12*0,3*1,32*0,                                                 BLOC1195
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1200
     3*1,3*0,1*1,8*0,3*1,32*0,                                          BLOC1205
     3*1,17*0,2*1,28*0,                                                 BLOC1210
     12*0,1*1,25*0,12*0,                                                BLOC1215
     12*0,3*1,35*0,                                                     BLOC1220
     3*1,10*0,1*1,36*0/                                                 BLOC1225
    DATA IORF5                                                          BLOC1230
   /3*1,47*0,                                                           BLOC1235
     3*1,10*0,2*1,35*0,                                                 BLOC1240
     3*1,12*0,3*1,32*0,                                                 BLOC1245
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     3*1,12*0,3*1,32*0,                                                 BLOC1250
     3*1,12*0,3*1,32*0,                                                 BLOC1255
     3*1,12*0,3*1,32*0,                                                 BLOC1260
     3*1,12*0,3*1,32*0,                                                 BLOC1265
     1*1,8*0,3*1,1*1,37*0,                                              BLOC1270
     3*1,9*0,1*1,7*0,2*1,28*0,                                          BLOC1275
     15*0,3*1,32*0,                                                     BLOC1280
     3*1,17*0,2*1,28*0,                                                 BLOC1285
     3*1,17*0,2*1,28*0,                                                 BLOC1290
     1*1,11*0,1*1,7*0,1*1,29*0,                                         BLOC1295
     1*1,11*0,1*1,7*0,1*1,29*0,                                         BLOC1300
     1*1,11*0,1*1,7*0,1*1,29*0,                                         BLOC1305
     1*0,2*1,15*0,4*1,28*0,                                             BLOC1310
     18*0,4*1,28*0,                                                     BLOC1315
     18*0,4*1,28*0/                                                     BLOC1320
    DATA IOFF6                                                          BLOC1325
    /18*0,4*1,28*0,                                                     BLOC1330
     3*1,6*0,2*1,4*0,3*1,32*0,                                          BLOC1335
     12*0,1*1,37*0,                                                     BLOC1340
     12*0,1*1,37*0,                                                     BLOC1345
     12*0,1*1,37*0,                                                     BLOC1350
     6*0,2*1,1*0,2*1,39*0,                                              BLOC1355
     9*0,1*1,10*0,1*1,29*0,                                             BLOC1360
     20*0,1*1,29*0,                                                     BLOC1365
     3*1,47*0,                                                          BLOC1370
     9*0,3*1,38*0,                                                      BLOC1375
     3*1,3*0,1*1,2*0,3*1,3*0,3*1,32*0,                                  BLOC1380
     9*0,3*1,38*0,                                                      BLOC1385
     6*0,6*1,38*0,                                                      BLOC1390
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1395
     1*1,5*0,1*1,43*0,                                                  BLOC1400
     1*0,2*1,47*0,                                                      BLOC1405
     3*1,47*0,                                                          BLOC1410
     3*1,6*0,3*1,3*0,3*1,32*0,                                          BLOC1415
     3*1,6*0,3*1,3*0,3*1,32*0/                                          BLOC1420
    DATA IOFF7      /                                                   BLOC1425
    /3*1,6*0,3*1,3*0,3*1,32*0,                                          BLOC1430
     15*0,3*1,32*0,                                                     BLOC1435
     16*0,1*1,33*0,                                                     BLOC1440
     3*1,12*0,3*1,32*0,                                                 BLOC1445
     3*1,12*0,3*1,32*0,                                                 BLOC1450
     6*0,6*1,3*0,3*1,32*0,                                              BLOC1455
     9*0,3*1,3*0,3*1,32*0,                                              BLOC1460
     1*0,2*1,12*0,3*1,32*0,                                             BLOC1465
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1470
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1475
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1480
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1485
     3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1490
     2*1,13*0,3*1,32*0,                                                 BLOC1495
```

```
     2*1,13*0,3*1,32*0,                                                  BLOC1500
     2*1,13*0,3*1,32*0,                                                  BLOC1505
     2*1,13*0,3*1,32*0,                                                  BLOC1510
     3*1,3*0,3*1,6*0,3*1,32*0,                                           BLOC1515
     3*1,12*0,3*1,32*0/                                                  BLOC1520
      DATA IORF8                                                         BLOC1525
     /3*1,12*0,3*1,32*0,                                                 BLOC1530
      3*1,12*0,3*1,32*0,                                                 BLOC1535
      1*1,8*0,2*1,39*0,                                                  BLOC1540
      1*1,8*0,2*1,39*0,                                                  BLOC1545
      6*0,6*1,38*0,                                                      BLOC1550
      50*0,                                                              BLOC1555
      1*1,8*0,2*1,4*0,3*1,32*0,                                          BLOC1560
      1*1,8*0,1*1,5*0,3*1,32*0,                                          BLOC1565
      50*0,                                                              BLOC1570
      1*1,8*0,1*1,40*0,                                                  BLOC1575
      1*1,5*0,3*1,3*0,1*1,3*0,2*1,20*0,1*1,11*0                          BLOC1580
      2*1,4*0,3*1,6*0,3*1,32*0,                                          BLOC1585
      50*0,                                                              BLOC1590
      50*0,                                                              BLOC1595
      9*0,3*1,3*0,3*1,32*0,                                              BLOC1600
      3*1,3*0,3*1,6*0,3*1,32*0,                                          BLOC1605
      50*0/                                                              BLOC1610
      DATA IORF9                                                         BLOC1615
     /1*1,8*0,2*1,4*0,3*1,32*0,                                          BLOC1620
      9*0,4*1,29*0,3*1,5*0,                                              BLOC1625
      9*0,3*1,38*0,                                                      BLOC1630
      9*0,4*1,29*0,3*1,5*0,                                              BLOC1635
      9*0,3*1,38*0,                                                      BLOC1640
      9*0,3*1,38*0,                                                      BLOC1645
      9*0,3*1,38*0,                                                      BLOC1650
      9*0,3*1,38*0,                                                      BLOC1655
      3*1,47*0,                                                          BLOC1660
      3*1,12*0,3*1,32*0,                                                 BLOC1665
      15*0,3*1,32*0,                                                     BLOC1670
      3*1,12*0,3*1,32*0,                                                 BLOC1675
      50*0,                                                              BLOC1680
      1*1,8*0,1*1,5*0,3*1,32*0,                                          BLOC1685
      1*1,8*0,1*1,5*0,3*1,32*0,                                          BLOC1690
      1*1,8*0,1*1,5*0,3*1,32*0,                                          BLOC1695
      1*1,8*0,1*1,5*0,3*1,32*0,                                          BLOC1700
      15*0,3*1,32*0,                                                     BLOC1705
      15*0,7*1,28*0/                                                     BLOC1710
      DATA IORF10                                                        BLOC1715
     /15*0,3*1,32*0,                                                     BLOC1720
      15*0,3*1,32*0,                                                     BLOC1725
      1*1,14*0,3*1,32*0,                                                 BLOC1730
      1*1,14*0,3*1,32*0,                                                 BLOC1735
      1*1,14*0,3*1,32*0,                                                 BLOC1740
      1*1,14*0,3*1,32*0,                                                 BLOC1745
```

```
     15*0,3*1,32*0,                                                    BLOC1750
    .18*0,1*1,19*0,1*1,11*0,                                           BLOC1755
    .3*1,3*0,6*0,3*1,35*0,                                             BLOC1760
    .6*0,3*1,6*0,3*1,32*0,                                             BLOC1765
    .15*0,3*1,32*0,                                                    BLOC1770
    .6*0,3*1,6*0,3*0,32*0,                                             BLOC1775
    .6*0,3*1,6*0,3*0,32*0,                                             BLOC1780
    .50*0,                                                             BLOC1785
    .15*0,7*1,28*0,                                                    BLOC1790
    .15*0,3*1,32*0,                                                    BLOC1795
    .20*0,1*1,29*0,                                                    BLOC1800
    .3*1,6*0,3*1,38*0,                                                 BLOC1805
    .50*0/                                                             BLOC1810
     DATA IORF11                                                       BLOC1815
    . /3*1,6*0,3*1,38*0,                                               BLOC1820
    .3*1,6*0,3*1,38*0,                                                 BLOC1825
    .3*1,6*0,3*1,38*0,                                                 BLOC1830
    .50*0,                                                             BLOC1835
    .3*1,17*0,2*1,28*0,                                                BLOC1840
    .3*1,3*0,3*1,6*0,3*1,32*0,                                         BLOC1845
    .3*1,3*0,6*1,3*0,3*1,32*0                                          BLOC1850
     END                                                               BLOC1855
```

PROGRAM CCUPD

PURPOSE

This program performs a selective update of specified values output by the Control Cost Program for use in the Regional Strategies Program

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

Cost Control Data (TAPE)

Namelist Change Data (CARDS)

OUTPUT

Updated Control Cost Data (TAPE & PRINTER)

Namelist Change Data (INTERMEDIATE DISK)

PROCEDURE

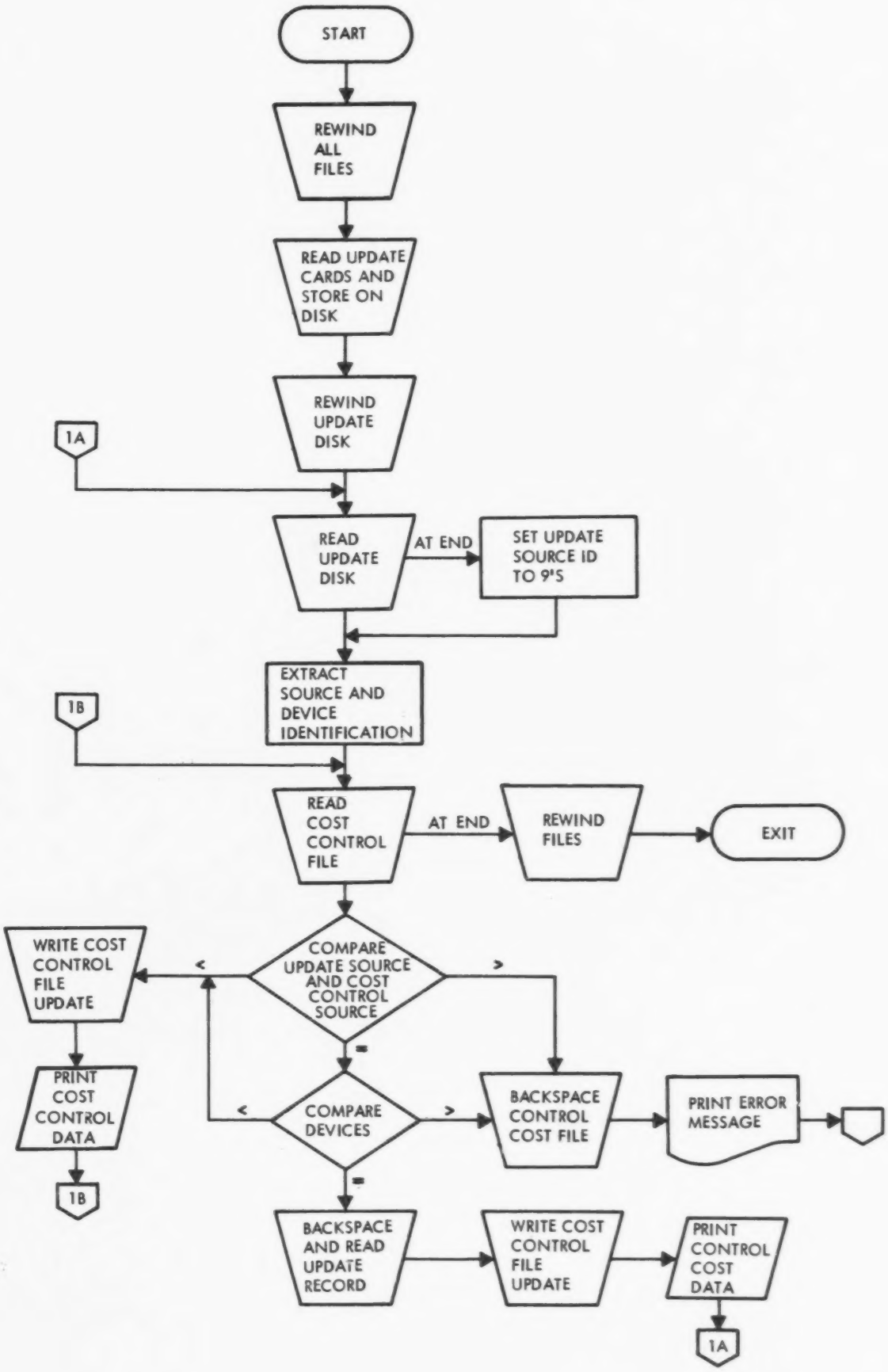
1. Store update cards onto disk
2. Read update disk
3. Read control cost file
4. Compare source identifications; if update ID smaller, write update file and return to 3; if update ID greater, backspace control file and return to 2; if sources equal go to 5.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

Input variables from both input files are described in Section 7.6, Table 7.6-1. These are the variable names used in the program; the same variables are input.


START
REWIND ALL FILES
READ UPDATE CARDS AND STORE ON DISK
REWIND UPDATE DISK
1A
READ UPDATE DISK
AT END
SET UPDATE SOURCE ID TO 9'S
EXTRACT SOURCE AND DEVICE IDENTIFICATION
1B
READ COST CONTROL FILE
AT END
REWIND FILES
EXIT
COMPARE UPDATE SOURCE AND COST CONTROL SOURCE
<
>
=
WRITE COST CONTROL FILE UPDATE
PRINT COST CONTROL DATA
1B
COMPARE DEVICES
<
>
=
BACKSPACE CONTROL COST FILE
PRINT ERROR MESSAGE
BACKSPACE AND READ UPDATE RECORD
WRITE COST CONTROL FILE UPDATE
PRINT CONTROL COST DATA
1A

```
C     STRATEGY INPUT FILE UPDATE PROGRAM                                        CCUP   0
C                                                                               CCUP   5
C         THIS PROGRAM PERFORMS A SELECTIVE UPDATE OF SPECIFIED                 CCUP  10
C     VALUES OUTPUT BY THE IPP COST MODEL FOR USE IN THE IPP                    CCUP  15
C     STRATEGIES MODEL.                                                         CCUP  20
C                                                                               CCUP  25
      DIMENSION CHAR(20)                                                        CCUP  30
      INTEGER POLJUR                                                            CCUP  35
      NAMELIST /STRATM/ IREGR,ISIC,ISIT,IPRC,IDDEV,PRTYPE,POLJUR,DEVEFS,CCUP  40
     .    DEVEFP,EMRATS,EMRATP,PRCRTM,SHIFTS,STKHTN,STKDIA,EXVELN,TEXN, CCUP  45
     .    RATCAP,CONEFS,CONEFP,ACFMN,TAC,HEC,HER,HED,HEG,AMC,AMR,AMD,    CCUP  50
     .    AMG,OUSE,AEMIS,IGAS,PLUME,IUSE                                 CCUP  55
      ICONC(IISIC,IISIT,IIPRC) = IISIC*10000 + IISIT*100+ IIPRC          CCUP  60
      WRITE (6,1005)                                                            CCUP  65
      REWIND 12                                                                 CCUP  70
      REWIND 14                                                                 CCUP  75
      REWIND 13                                                                 CCUP  80
      READ (13,END=9200) (CHAR(I), I =1,7)                                      CCUP  85
      WRITE (14) (CHAR(I),I=1,7)                                                CCUP  90
      WRITE ( 6,1355) (CHAR(I), I=1,5)                                          CCUP  95
C     READ IN NAMELIST CARDS AND PUT ONTO DISK 12                               CCUP 100
 2000 CONTINUE                                                                  CCUP 105
      READ (5,1435,END=3000) CHAR                                               CCUP 110
      WRITE (6,1455) CHAR                                                       CCUP 115
      WRITE(12,1435) CHAR                                                       CCUP 120
      GO TO 2000                                                                CCUP 125
C     UPDATE SECTION                                                            CCUP 130
 3000 CONTINUE                                                                  CCUP 135
      REWIND 12                                                                 CCUP 140
      IUSE=1                                                                    CCUP 145
C     READ NEXT UPDATE RECORD                                                   CCUP 150
 3200 CONTINUE                                                                  CCUP 155
      READ (12,STRATM,END=3400)                                                 CCUP 160
      GO TO 3600                                                                CCUP 165
 3400 CONTINUE                                                                  CCUP 170
      LSOR=99999999                                                             CCUP 175
      IDDEV=99                                                                  CCUP 180
      GO TO 3650                                                                CCUP 185
 3600 CONTINUE                                                                  CCUP 190
      LSOR = ICONC(ISIC,ISIT,IPRC)                                              CCUP 195
 3650 KSOR=LSOR                                                                 CCUP 200
      KDDEV=IDDEV                                                               CCUP 205
C                                                                               CCUP 210
 4000 CONTINUE                                                                  CCUP 215
      READ (13,END=9000)                                                        CCUP 220
     .    IREGR,ISIC,ISIT,IPRC,IDDEV,PRTYPE,POLJUR,DEVEFS,DEVEFP,EMRATS,CCUP 225
     .    EMRATP,PRCRTM,SHIFTS,STKHTN,STKDIA,EXVELN,TEXN,RATCAP,CONEFS, CCUP 230
     .    CONEFP,ACFMN,TAC,HEC,HER,HED,HEG,AMC,AMR,AMD,AMG,OUSE,AEMIS,  CCUP 235
     .    IGAS,PLUME                                                              CCUP 240
      LSOR = ICONC(ISIC,ISIT,IPRC)                                              CCUP 245
```

```
      IF (LSOR-KSOR) 5000,6000,7000                                      CCUP 250
 5000 CONTINUE                                                           CCUP 255
      WRITE(14)                                                          CCUP 260
     .    IREGR,ISIC,ISIT,IPRC,IDDEV,PRTYPE,POLJUR,DEVEFS,DEVEFP,EMRATS,CCUP 265
     .    EMRATP,PRCRTM,SHIFTS,STKHTN,STKDIA,EXVELN,TEXN,RATCAP,CONEFS,  CCUP 270
     .    CONEFP,ACFMN,TAC,HEC,HER,HED,HEG,AMC,AMR,AMD,AMG,OUSE,AEMIS,   CCUP 275
     .    IGAS,PLUME                                                     CCUP 280
      IUSE=1                                                             CCUP 285
      WRITE (6,STRATM)                                                   CCUP 290
      GO TO 4000                                                         CCUP 295
 6000 CONTINUE                                                           CCUP 300
      IF (IDDEV-KDDEV) 5000,6200,7000                                    CCUP 305
 6200 CONTINUE                                                           CCUP 310
      BACKSPACE 12                                                       CCUP 315
      BACKSPACE 12                                                       CCUP 320
      BACKSPACE 12                                                       CCUP 325
      READ (12,STRATM)                                                   CCUP 330
      WRITE(14)                                                          CCUP 335
     .    IREGR,ISIC,ISIT,IPRC,IDDEV,PRTYPE,POLJUR,DEVEFS,DEVEFP,EMRATS,CCUP 340
     .    EMRATP,PRCRTM,SHIFTS,STKHTN,STKDIA,EXVELN,TEXN,RATCAP,CONEFS,  CCUP 345
     .    CONEFP,ACFMN,TAC,HEC,HER,HED,HEG,AMC,AMR,AMD,AMG,OUSE,AEMIS,   CCUP 350
     .    IGAS,PLUME                                                     CCUP 355
      IUSE=3                                                             CCUP 360
      WRITE (6,STRATM)                                                   CCUP 365
      IUSE=1                                                             CCUP 370
      GO TO 3200                                                         CCUP 375
C                                                                        CCUP 380
 7000 CONTINUE                                                           CCUP 385
      BACKSPACE 13                                                       CCUP 390
      WRITE (6,7015) KSOR,KDDEV                                          CCUP 395
      IUSE=2                                                             CCUP 400
      GO TO 3200                                                         CCUP 405
C     END OF RUN                                                         CCUP 410
 9000 CONTINUE                                                           CCUP 415
      IF  (KSOR.EQ.99999999)  GO TO 9200                                 CCUP 420
      WRITE (6,7015) KSOR,KDDEV                                          CCUP 425
      WRITE (6,9015)                                                     CCUP 430
 9200 CONTINUE                                                           CCUP 435
      REWIND 13                                                          CCUP 440
      REWIND 14                                                          CCUP 445
      STOP                                                               CCUP 450
 1005 FORMAT ('1')                                                       CCUP 455
 1335 FORMAT(28X,5A4)                                                    CCUP 460
 1355 FORMAT('1',75X,5A4 //)                                             CCUP 465
 1435 FORMAT (20A4)                                                      CCUP 470
 1455 FORMAT (15X,20A4)                                                  CCUP 475
 7015 FORMAT  ('0******  ERROR  ******   RECORD FOR SOURCE ',I8,         CCUP 480
     .         ' DEVICE ',I3,' COULD NOT BE UPDATED. '                   CCUP 485
     .        /'    EITHER RECORD IS NOT ON FILE OR UPDATE CARD WAS',    CCUP 490
     .         ' OUT OF ORDER. ' /)                                      CCUP 495

 9015 FORMAT ('    SUCCEEDING UPDATES WERE ALSO IGNORED. ')              CCUP 500
      END                                                                CCUP 505
```

PROGRAM NAME ESTAND(Emission Standards Program)

PURPOSE

To output source/device combinations which best meet the various standards applied to each source.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G Ver.18

INPUT

SORTED Cost Output File (DISK)

TITLE/DATE card (READER)

NAMELIST data (READER)

OUTPUT

Emission Standards Report (PRINTER)

Error messages (DISK)

Emission Standards File (TAPE)

Error message report (PRINTER)

PROCEDURE

The program calls the subroutines needed to produce the desired emission standards file. The standards picked are executed for each pollutant within each category within each political jurisdiction.

For each source:

1. All device records applicable are read in.
2. Each standard picked is executed
3. The best device is picked to reduce the emission.
4. The source/device combination picked is output.
5. Steps 2-4 are executed for each pollutant, within each category.
6. Steps 1-5 are executed for each political jurisdiction.

After all political jurisdictions have been satisfied, the output routine is called to write a list of the emission standard file and the error routine is called to list any error messages.

SUBROUTINES

PRESET - Initializes data

INLIST - Lists input or preset data of standards to be applied

EST01 - Null standard to produce existing conditions

EST02 - Maximum technology standard

EST03 - Maximum technology standard, w/option to omit up to ten devices

EST04 - Maximum technology standard, w/option to omit up to ten devices

EST05 - Potential emission standard

EST06 - Potential emission standard

EST07 - Potential emission standard

EST08 - Rated capacity standard

EST09 - Rated capacity standard

EST10 - Rated capacity standard

EST11 - Heat input vs. stack height standard

EST12 - Effective stack height standard

EST13 - Exhaust concentration standard

EST14 - Exhaust concentration standard

EST15 - Exhaust concentration standard

EST16 - Exhaust concentration standard

EST17 - Exhaust concentration standard

FST18 - Process weight standard

EST19 - Process weight standard

EST20 - Process weight standard

EST21 - Fuel elimination standard

EST22 - Fuel elimination standard

EST23 - Sulfur limitation standard

EST24 - Sulfur limitation standard

EST25 - Sulfur limitation standard

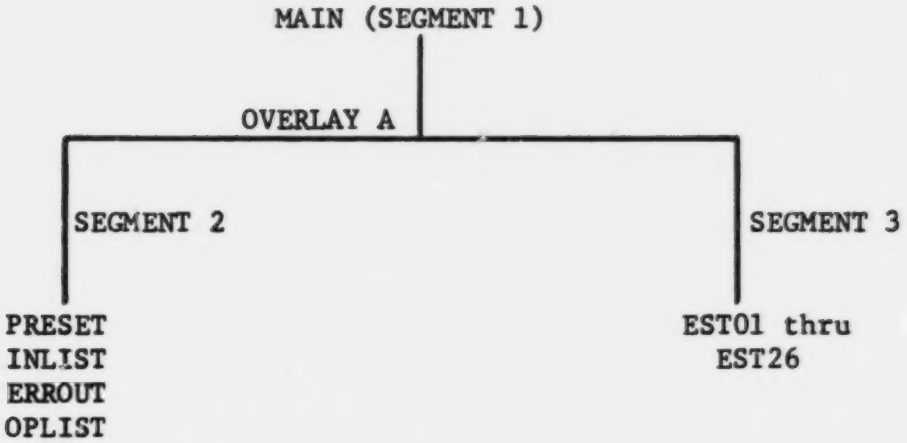
EST26 - Sulfur limitation standard

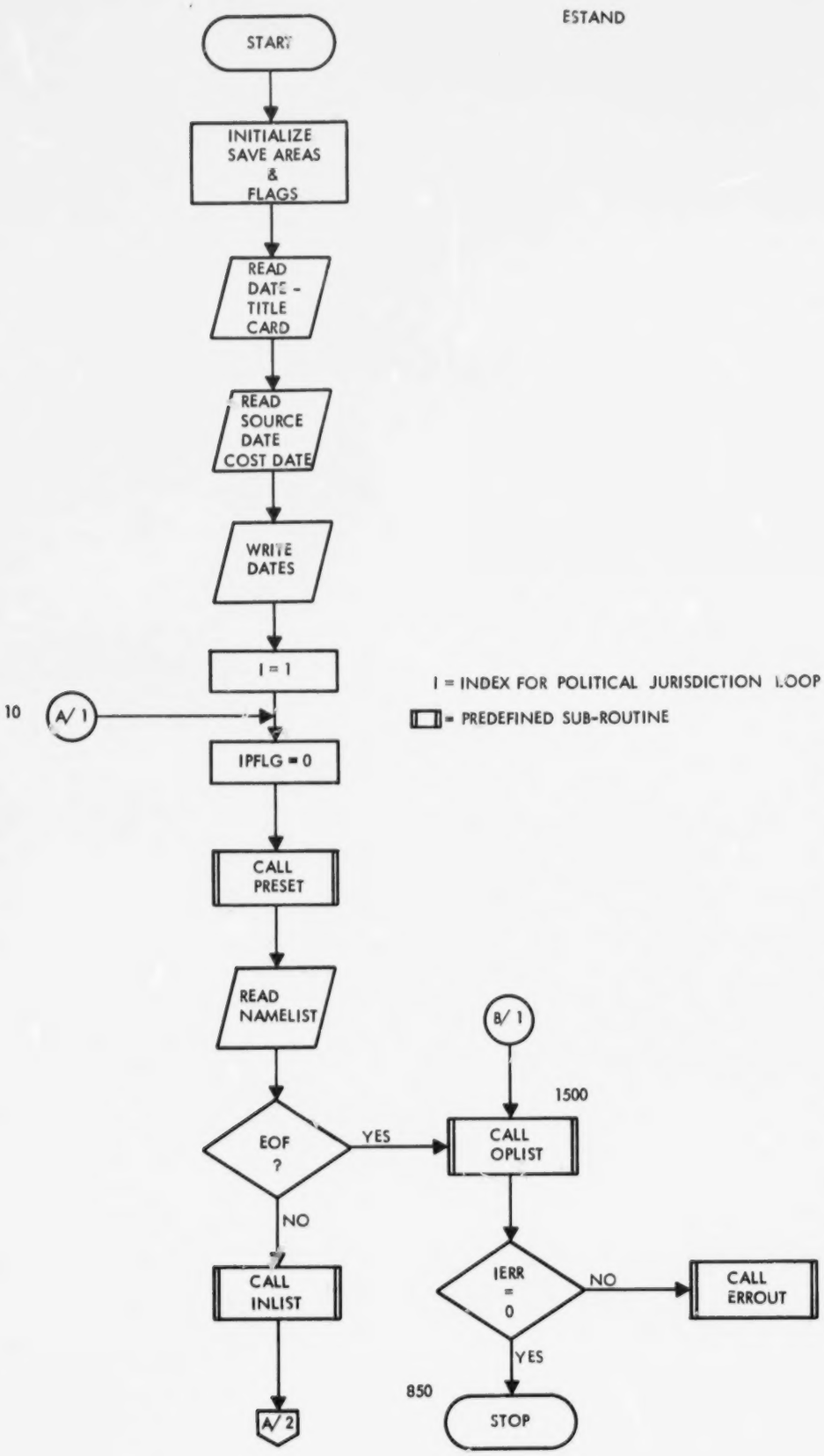
ESFILE Variable blocked binary records

Variable Name	Description	Format
NRDGON	Region number	Integer
NSIC	SIC number	Integer
NSITE	Site/Process number	Integer
NCD1	Control device number	Integer
COSTN1	Control device cost	Fl. Pt.
EFFN(1)	Control device SO_2 efficiency	Fl. Pt.
EFFN(2)	Control device Particulate efficiency	Fl. Pt.
AEMN	Allowable emission	Fl. Pt.
EXEMN	Existing emission	Fl. Pt.
REFF	Required efficiency	Fl. Pt.
FQTY(1)	Coal quantity	Fl. Pt.
FQTY(2)	Residual oil quantity	Fl. Pt.
FQTY(3)	Distillate oil quantity	Fl. Pt.
FQTY(4)	Gas quantity	Fl. Pt.
IGAS	Gas cooling flag	Integer
IPOL	Pollutant number	Integer
IPJN	Political jurisdiction number	Integer

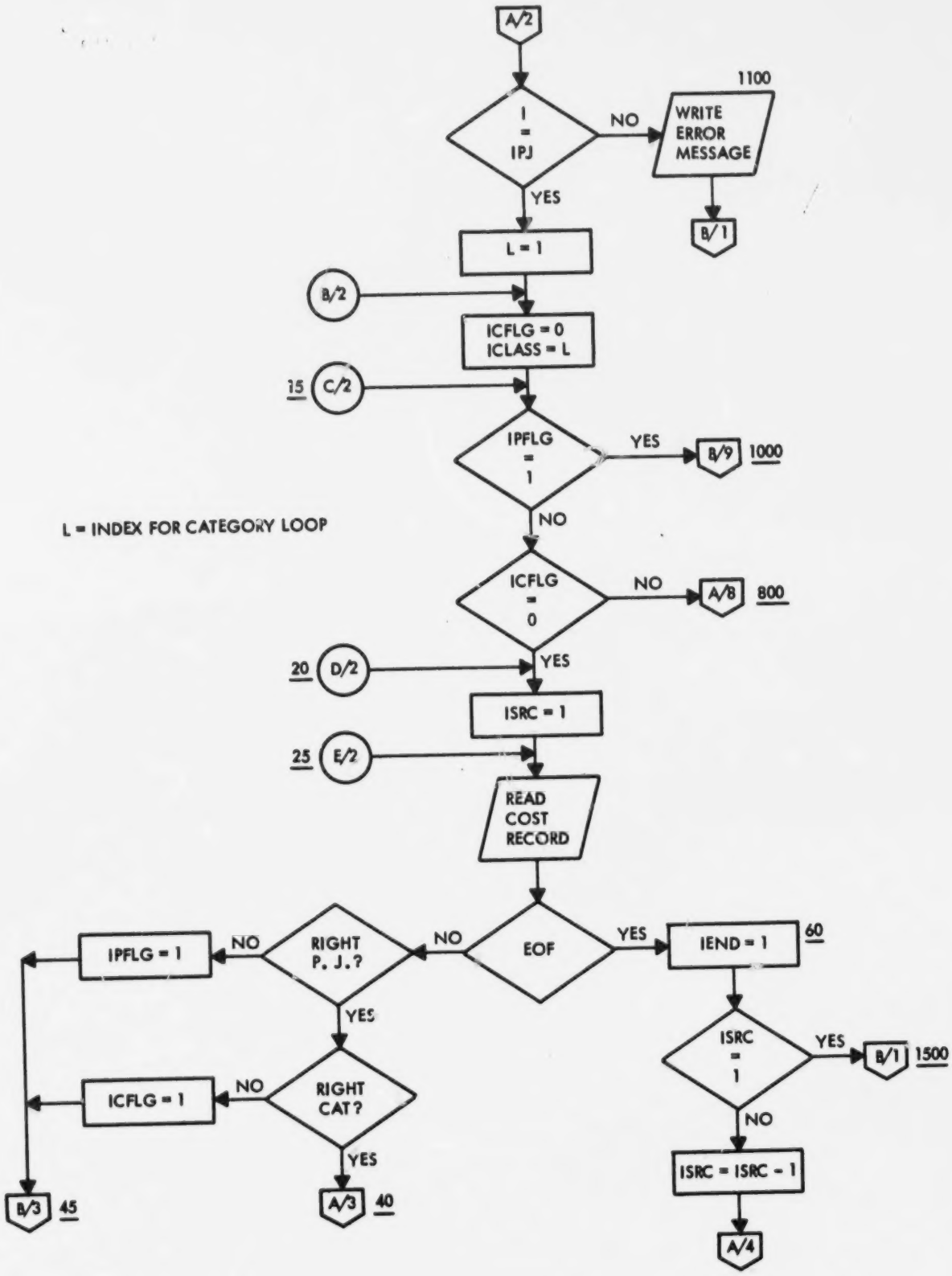
ICLASS	Category number	Integer
NREG	Standard number	Integer
IFLAG	Error flag-0-no error	Integer
	1 - error	
	2 - most efficient device used	

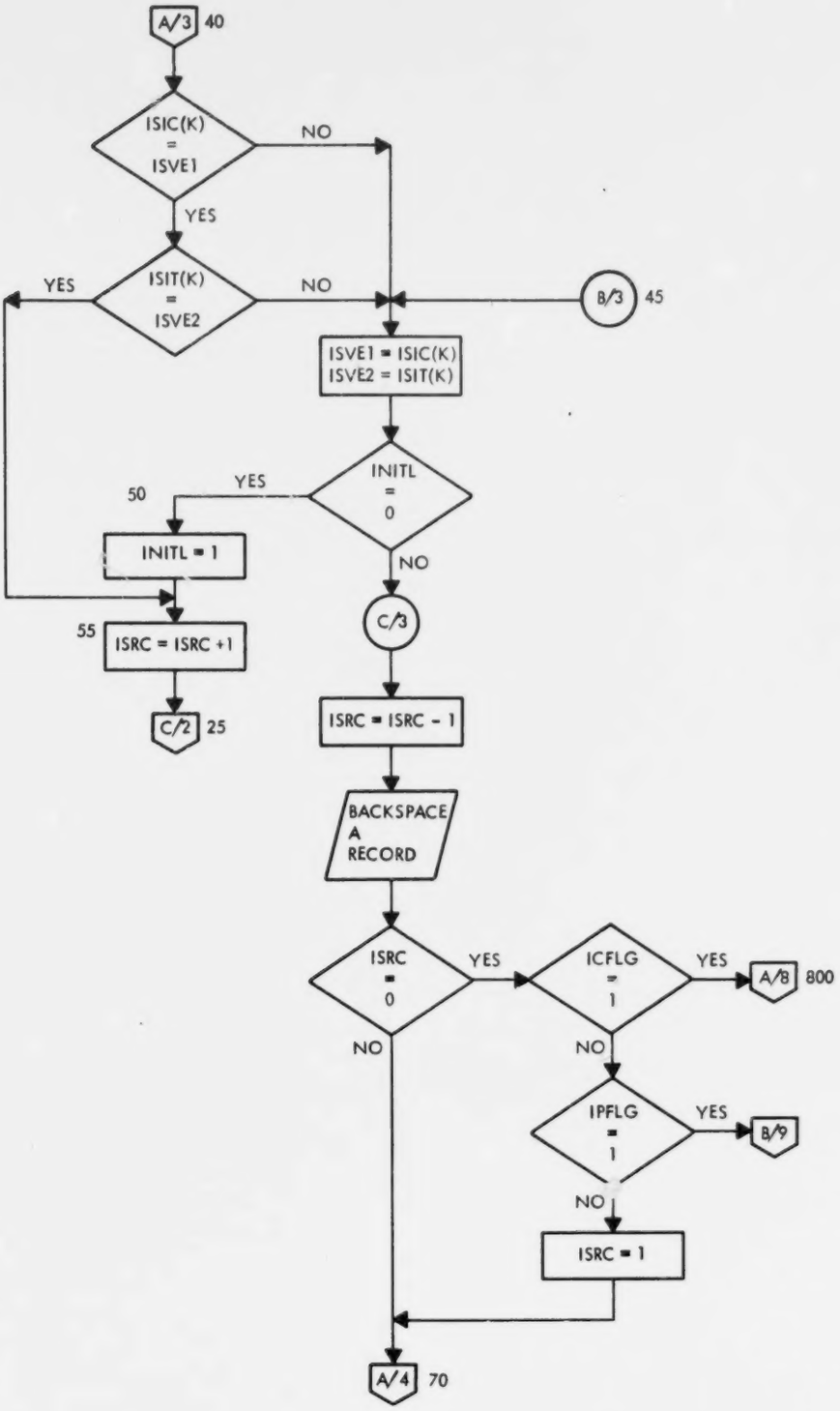
ESTAND OVERLAY STRUCTURE

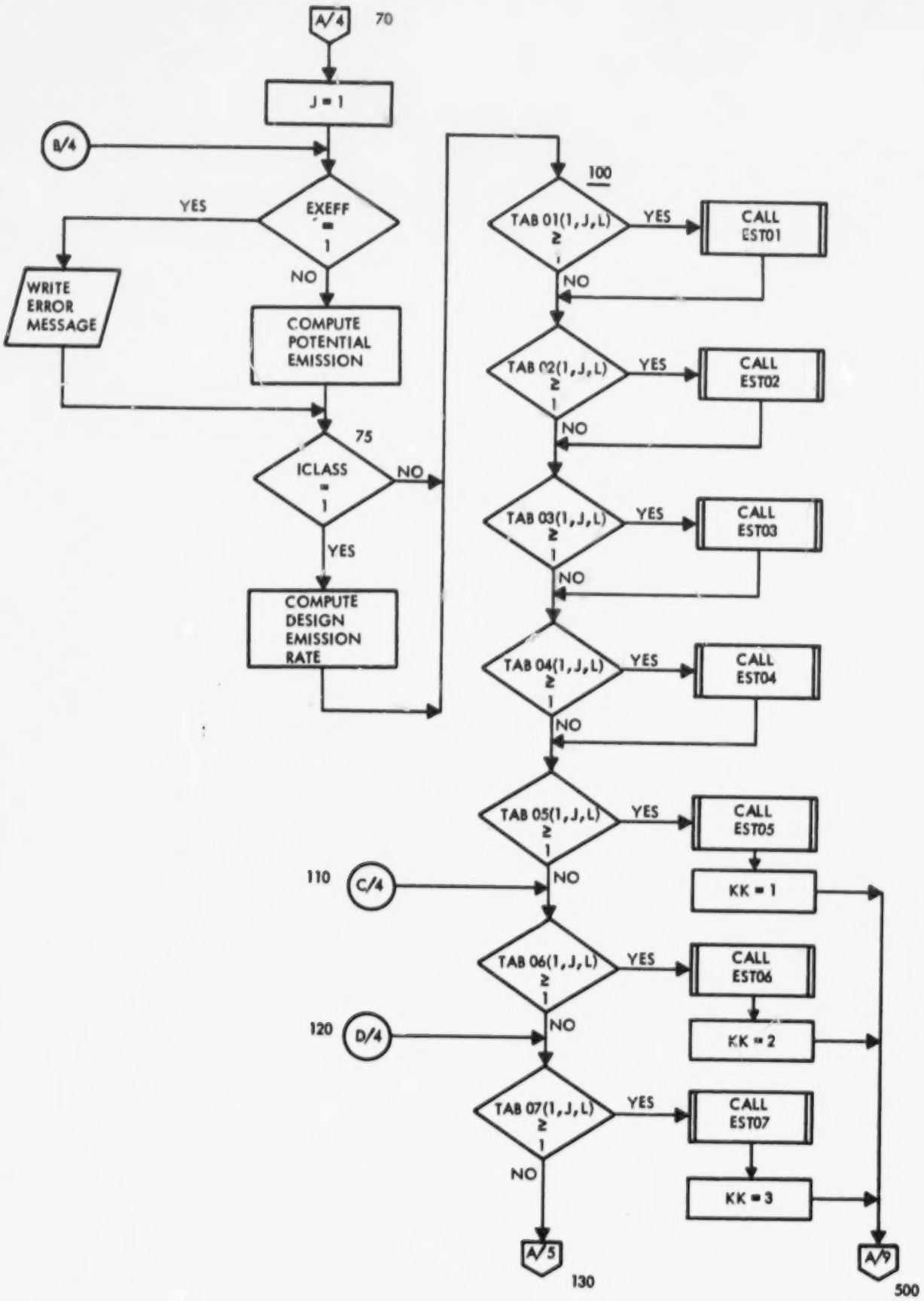


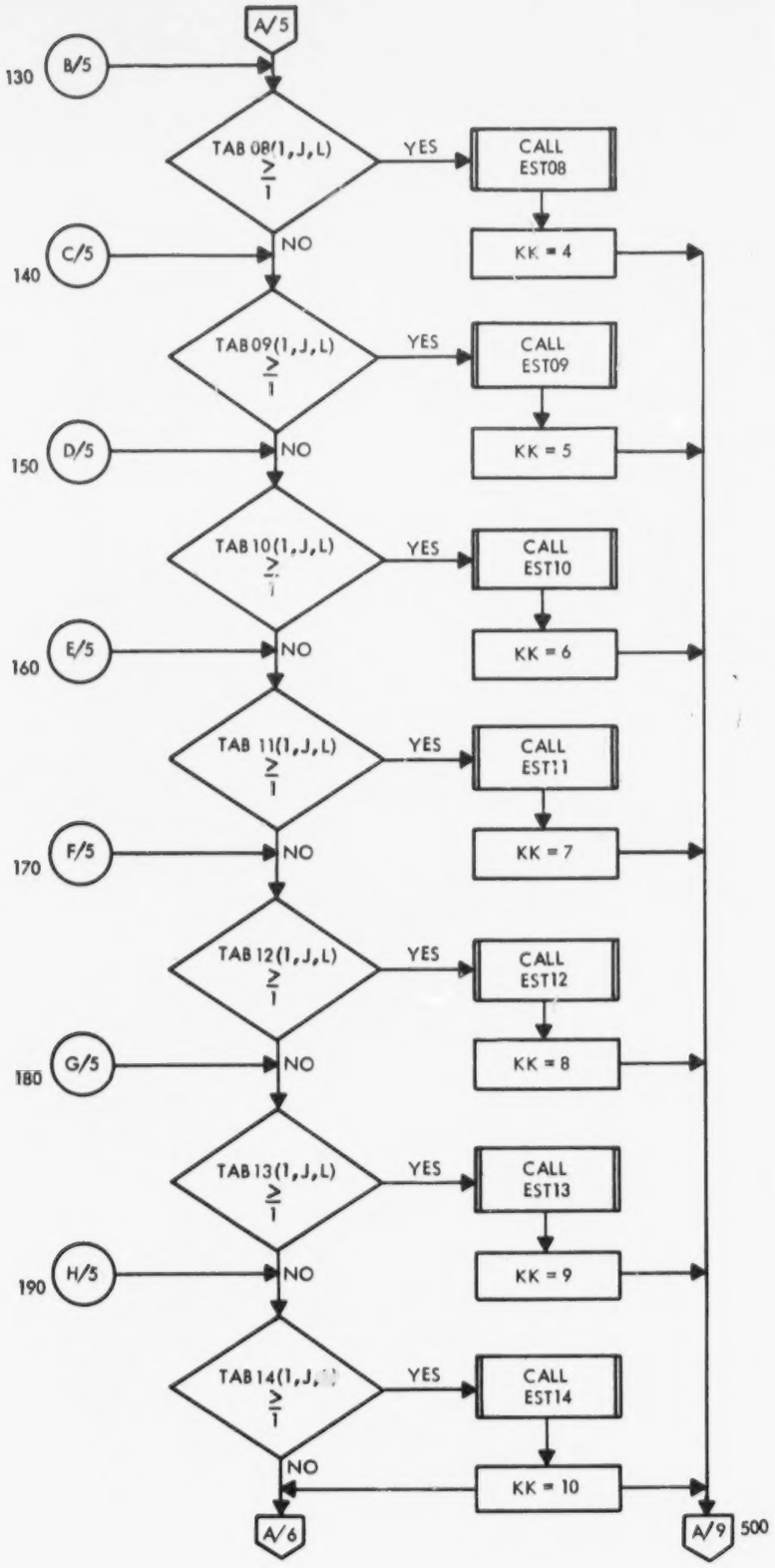

START
INITIALIZE SAVE AREAS & FLAGS
READ DATE - TITLE CARD
READ SOURCE DATE COST DATE
WRITE DATES
I = 1
I = INDEX FOR POLITICAL JURISDICTION LOOP
= PREDEFINED SUB-ROUTINE
10
A/ 1
IPFLG = 0
CALL PRESET
READ NAMELIST
B/ 1
1500
EOF ?
YES
CALL OPLIST
NO
CALL INLIST
IERR = 0
NO
CALL ERROUT
YES
850
STOP
A/ 2

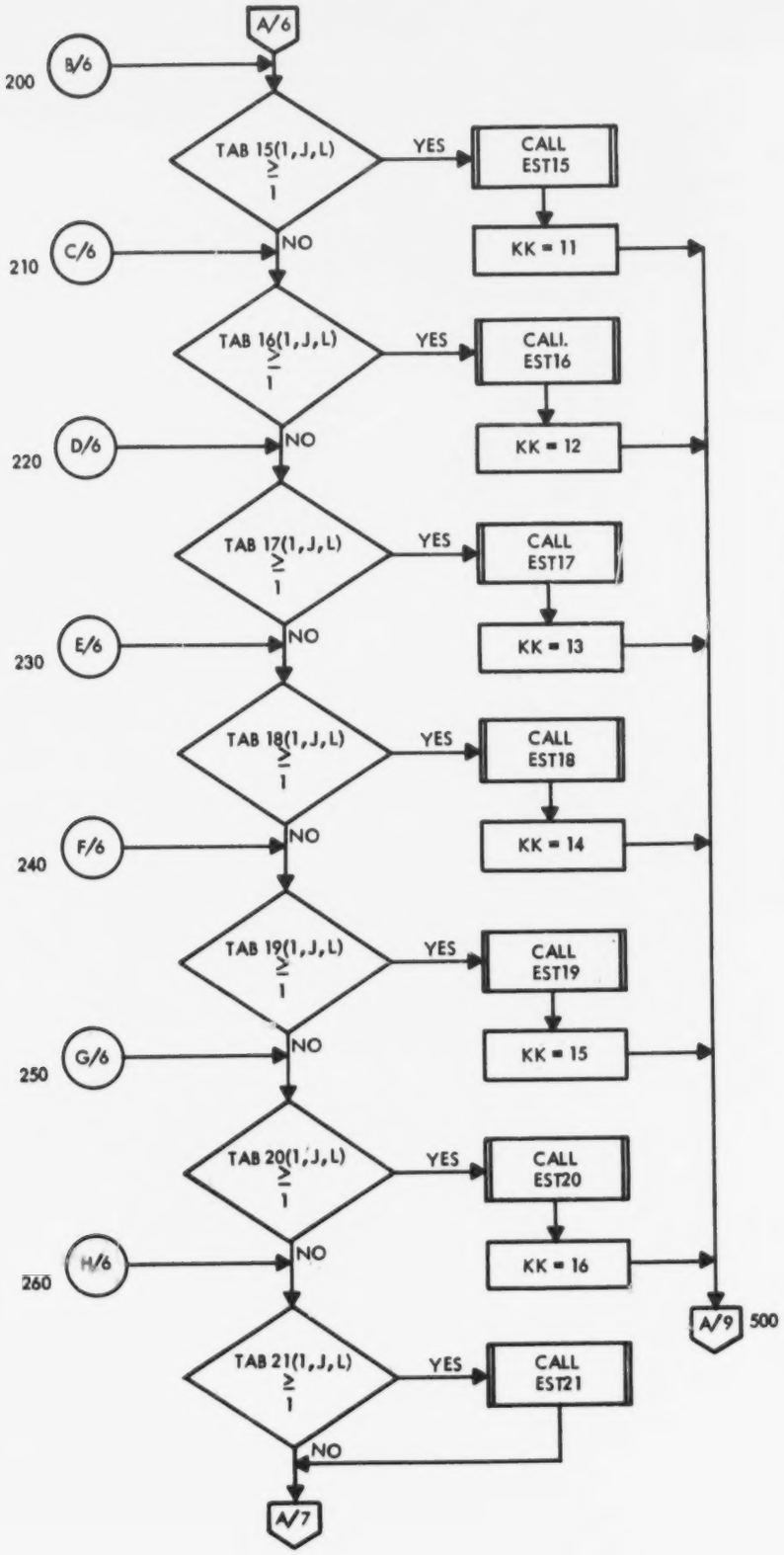
L = INDEX FOR CATEGORY LOOP

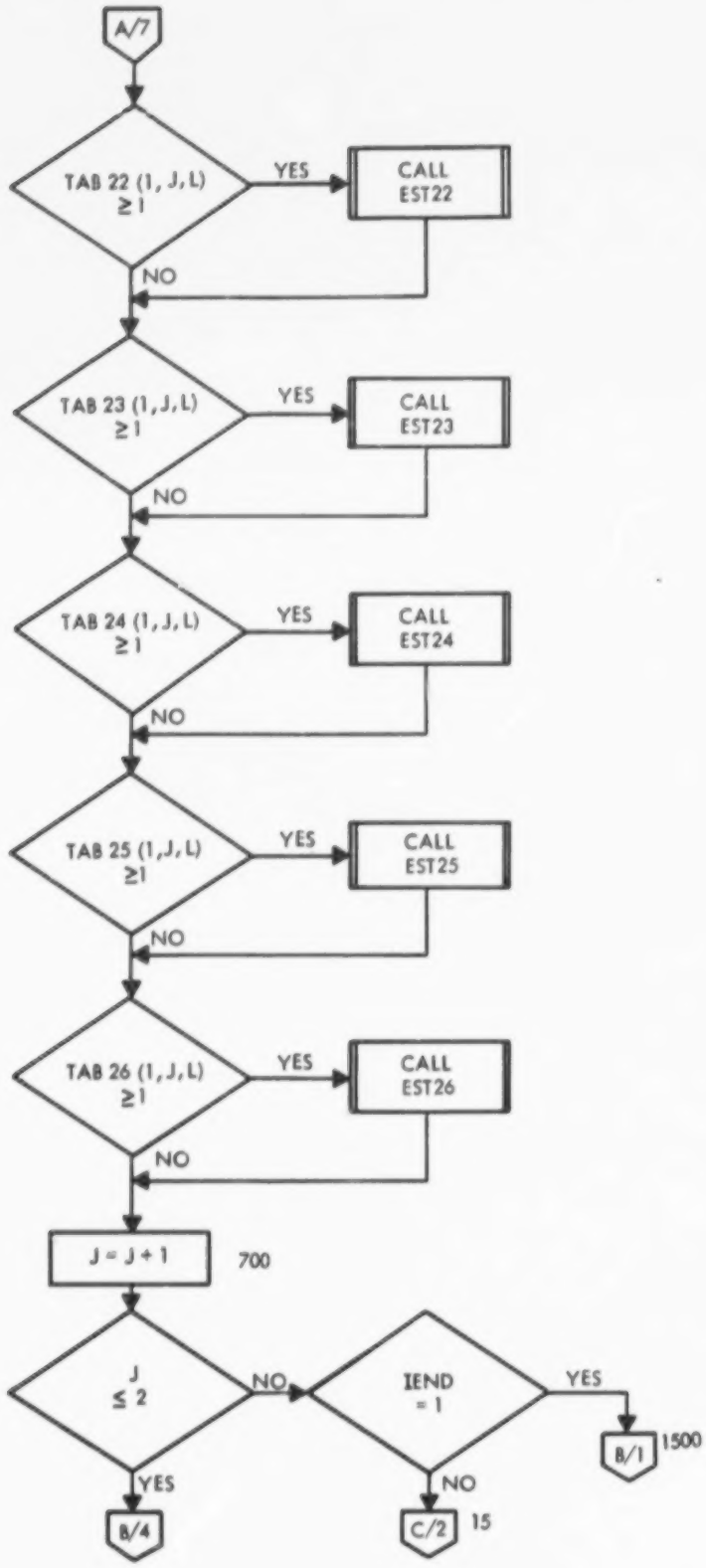


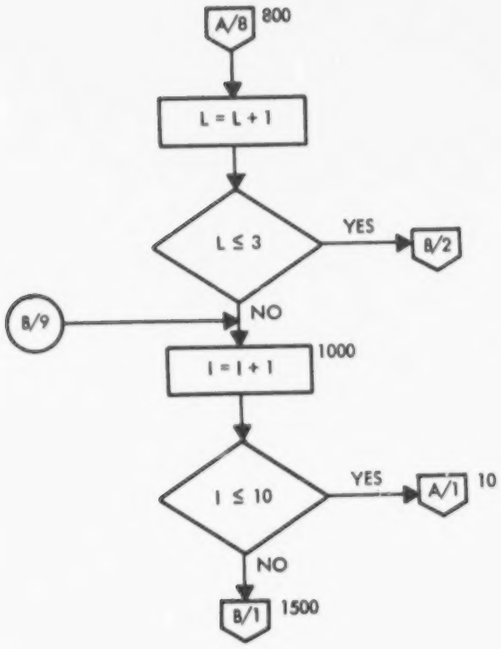

A/3 40
ISIC(K) = ISVE1
NO
YES
ISIT(K) = ISVE2
YES
NO
B/3 45
ISVE1 = ISIC(K)
ISVE2 = ISIT(K)
INITL = 0
YES
50
INITL = 1
NO
C/3
55
ISRC = ISRC +1
C/2 25
ISRC = ISRC - 1
BACKSPACE A RECORD
ISRC = 0
YES
ICFLG = 1
YES
A/8 800
NO
NO
IPFLG = 1
YES
B/9
NO
ISRC = 1
A/4 70

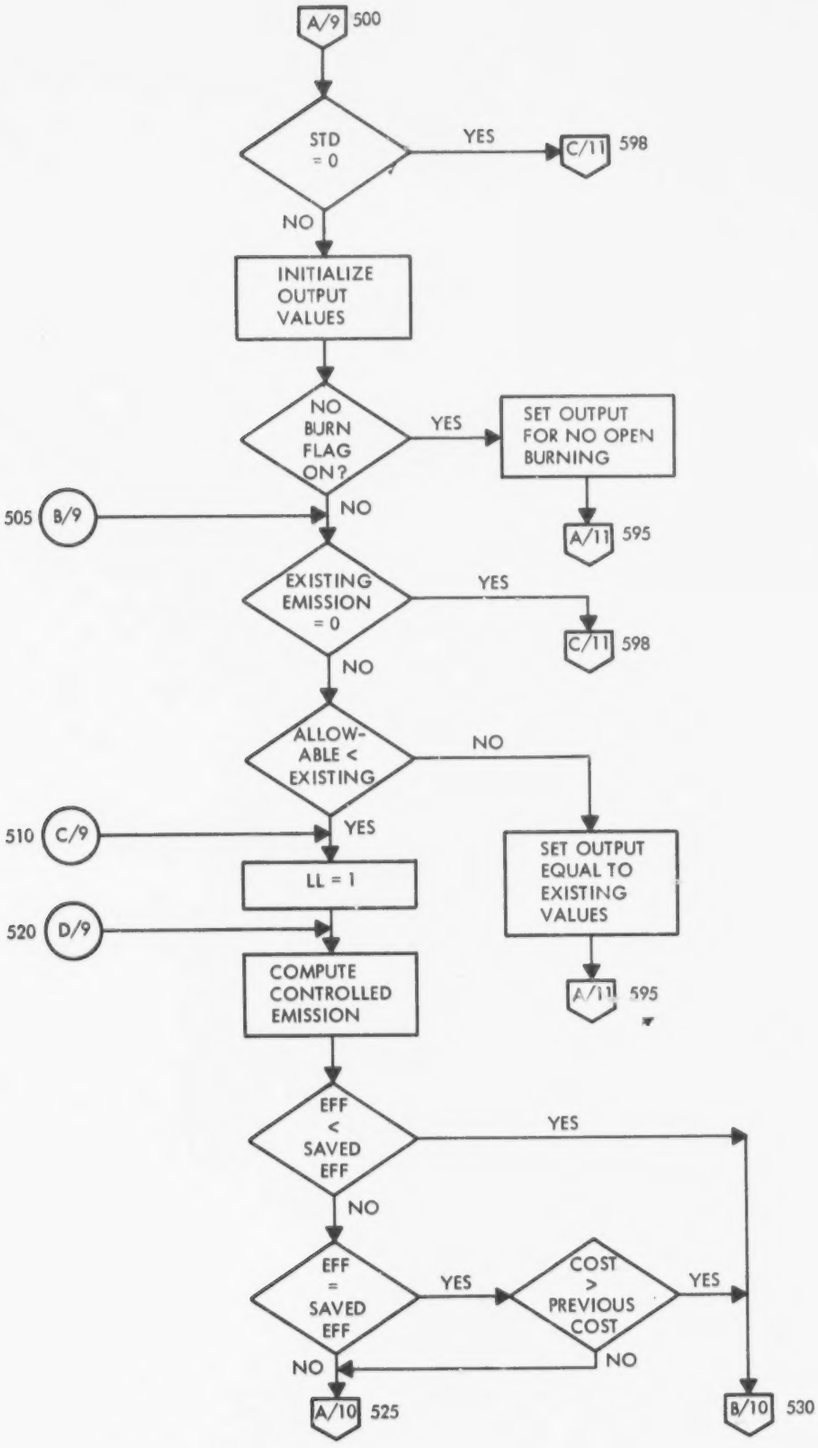

A/4
70
J = 1
B/4
EXEFF = 1
YES
NO
WRITE ERROR MESSAGE
COMPUTE POTENTIAL EMISSION
75
ICLASS = 1
NO
YES
COMPUTE DESIGN EMISSION RATE
100
TAB 01(1,J,L) ≥ 1
YES
CALL EST01
NO
TAB 02(1,J,L) ≥ 1
YES
CALL EST02
NO
TAB 03(1,J,L) ≥ 1
YES
CALL EST03
NO
TAB 04(1,J,L) ≥ 1
YES
CALL EST04
NO
TAB 05(1,J,L) ≥ 1
YES
CALL EST05
KK = 1
110
C/4
NO
TAB 06(1,J,L) ≥ 1
YES
CALL EST06
KK = 2
120
D/4
NO
TAB 07(1,J,L) ≥ 1
YES
CALL EST07
KK = 3
NO
A/5
130
A/9
500

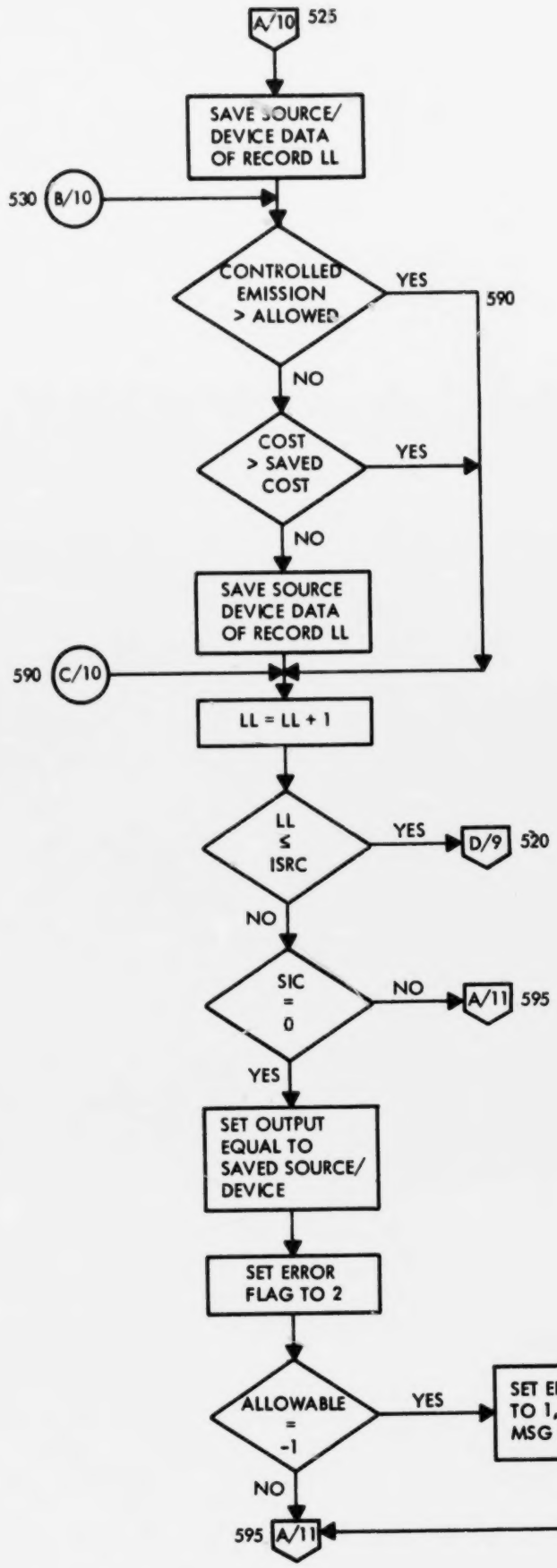

A/5
130
B/5
TAB 08(1,J,L) ≥ 1
YES
CALL EST08
KK = 4
140
C/5
NO
TAB 09(1,J,L) ≥ 1
YES
CALL EST09
KK = 5
150
D/5
NO
TAB 10(1,J,L) ≥ 1
YES
CALL EST10
KK = 6
160
E/5
NO
TAB 11(1,J,L) ≥ 1
YES
CALL EST11
KK = 7
170
F/5
NO
TAB 12(1,J,L) ≥ 1
YES
CALL EST12
KK = 8
180
G/5
NO
TAB 13(1,J,L) ≥ 1
YES
CALL EST13
KK = 9
190
H/5
NO
TAB 14(1,J,L) ≥ 1
YES
CALL EST14
KK = 10
NO
A/6
A/9
500

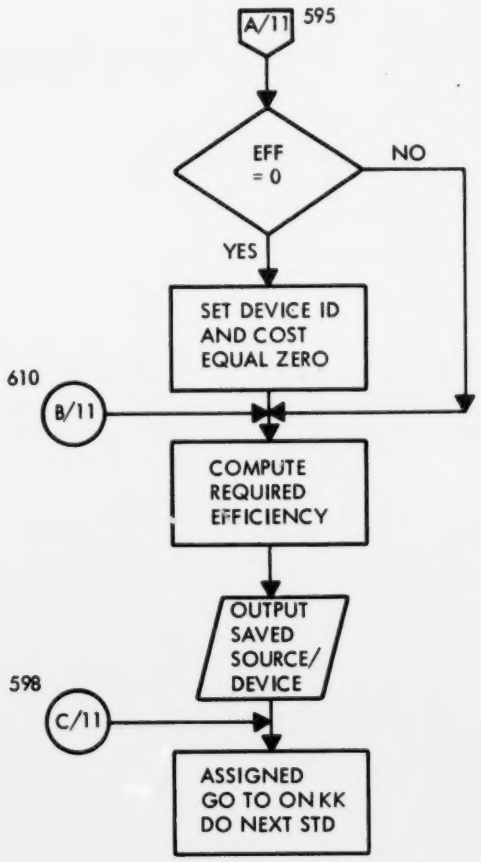

A/6
200
B/6
TAB 15(1,J,L) ≥ 1
YES
CALL EST15
KK = 11
210
C/6
NO
TAB 16(1,J,L) ≥ 1
YES
CALL EST16
KK = 12
220
D/6
NO
TAB 17(1,J,L) ≥ 1
YES
CALL EST17
KK = 13
230
E/6
NO
TAB 18(1,J,L) ≥ 1
YES
CALL EST18
KK = 14
240
F/6
NO
TAB 19(1,J,L) ≥ 1
YES
CALL EST19
KK = 15
250
G/6
NO
TAB 20(1,J,L) ≥ 1
YES
CALL EST20
KK = 16
260
H/6
NO
A/9
500
TAB 21(1,J,L) ≥ 1
YES
CALL EST21
NO
A/7


A/7
TAB 22 (I, J, L) ≥ 1
YES
CALL EST22
NO
TAB 23 (I, J, L) ≥ 1
YES
CALL EST23
NO
TAB 24 (I, J, L) ≥ 1
YES
CALL EST24
NO
TAB 25 (I, J, L) ≥ 1
YES
CALL EST25
NO
TAB 26 (I, J, L) ≥ 1
YES
CALL EST26
NO
J = J + 1
700
J ≤ 2
NO
IEND = 1
YES
B/1
1500
YES
B/4
NO
C/2
15


A/8
800
L = L + 1
L ≤ 3
YES
B/2
B/9
NO
I = I + 1
1000
I ≤ 10
YES
A/1
10
NO
B/1
1500


A/9 500
STD = 0
YES
C/11 598
NO
INITIALIZE OUTPUT VALUES
NO BURN FLAG ON?
YES
SET OUTPUT FOR NO OPEN BURNING
A/11 595
505 B/9
NO
EXISTING EMISSION = 0
YES
C/11 598
NO
ALLOW-ABLE < EXISTING
NO
510 C/9
YES
LL = 1
SET OUTPUT EQUAL TO EXISTING VALUES
A/11 595
520 D/9
COMPUTE CONTROLLED EMISSION
EFF < SAVED EFF
YES
NO
EFF = SAVED EFF
YES
COST > PREVIOUS COST
YES
NO
NO
A/10 525
B/10 530


A/10
525
SAVE SOURCE/
DEVICE DATA
OF RECORD LL
530
B/10
CONTROLLED
EMISSION
> ALLOWED
YES
590
NO
COST
> SAVED
COST
YES
NO
SAVE SOURCE
DEVICE DATA
OF RECORD LL
590
C/10
LL = LL + 1
LL
≤
ISRC
YES
D/9
520
NO
SIC
=
0
NO
A/11
595
YES
SET OUTPUT
EQUAL TO
SAVED SOURCE/
DEVICE
SET ERROR
FLAG TO 2
ALLOWABLE
=
-1
YES
SET ERROR FLAG
TO 1, ERROR
MSG FLAG TO 1
NO
595
A/11


A/11
595
EFF
= 0
NO
YES
SET DEVICE ID
AND COST
EQUAL ZERO
610
B/11
COMPUTE
REQUIRED
EFFICIENCY
OUTPUT
SAVED
SOURCE/
DEVICE
598
C/11
ASSIGNED
GO TO ONKK
DO NEXT STD

```
C                 'EMISSION STANDARDS' ROUTINES ***MAIN PROGRAM ***    ESTA   1
C                                                                      ESTA   2
      INTEGER PTYPE(3),IDATE(5),TITLE(5)                               ESTA   3
      INTEGER DUMID(7)                                                 ESTA   4
      COMMON /DVICE/          IERR,IREGON,IBURN,DER                    ESTA   5
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,    ESTA   6
     .           NOBN12,       NOBN14,NOBN15,NOBN16,NOBN17,NOBN18,     ESTA   7
     .           NOBN19,NOBN20                                         ESTA   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),    ESTA   9
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),ESTA  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),    ESTA  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),         ESTA  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN,EXEFF(2,25)              ESTA  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ESTA  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),       ESTA  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),       ESTA  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),       ESTA  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),       ESTA  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),       ESTA  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                      ESTA  20
      DATA PTYPE /'B','P','S'/,DUMID/7*C/                              ESTA  21
      NAMELIST/ESTAND/TAB01,TAB02,TAB03,TAB04,TAB05,TAB06,TAB07,TAB08, ESTA  22
     .    TAB09,TAB10,TAB11,TAB12,TAB13,TAB14,TAB15,TAB16,TAB17,TAB18, ESTA  23
     .    TAB19,TAB20,TAB21,TAB22,TAB23,TAB24,TAB25,TAB26,NPJ,NAMEPJ,  ESTA  24
     9       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,NOBN12,NOBN13,  ESTA  25
     .NOBN14,NOBN15,NOBN16,NOBN17,NOBN18,NOBN19,NOBN20                 ESTA  26
C                                                                      ESTA  27
      REWIND 8                                                         ESTA  28
      REWIND 9                                                         ESTA  29
      REWIND 10                                                        ESTA  30
          ISAV1 = 0                                                    ESTA  31
          ISAV2 = 0                                                    ESTA  32
          IEND = 0                                                     ESTA  33
      IERR = 0                                                         ESTA  34
      IBURN = 0                                                        ESTA  35
          INITL = 0                                                    ESTA  36
C                                                                      ESTA  37
C READ DATE AND WRITE IT OUT                                           ESTA  38
C                                                                      ESTA  39
  911 FORMAT(1H1)                                                      ESTA  40
      READ (5,901) IREGON, TITLE, IDATE                                ESTA  41
  901 FORMAT(I3,5A4,5A4)                                               ESTA  42
      WRITE (6,902)  IDATE                                             ESTA  43
  902 FORMAT('1',T10,'CONTROL STRATEGY EMISSION STANDARDS RUN ',5A4)    ESTA  44
      WRITE (8,906)  IDATE                                             ESTA  45
  906 FORMAT(5X,5A4)                                                   ESTA  46
      WRITE (20) IREGON,DUMID(1),DUMID(2),(TITLE(I),I=1,5),            ESTA  47
     .           (IDATE(I),I=1,5),(DUMID(I),I=1,7)                     ESTA  48
C                                                                      ESTA  49
      READ (9)          (IDATE(I),I=1,5)                               ESTA  50
      WRITE (6,904) IDATE                                              ESTA  51
  904 FORMAT('0',T10,'CONTROL COST-EFFECTIVENESS FILE DATE ',5A4)      ESTA  52
   10 DO 1000 I =1,10                                                  ESTA  53
          JPJ = I                                                      ESTA  54
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      IPFLG = 0                                                          ESTA  55
C  PRESET INPUT DATA BEFORE READING NEXT P. J. NAMELIST INPUT            ESTA  56
      CALL PRESET                                                        ESTA  57
      READ (5,ESTAND,END=1500)                                           ESTA  58
C  LIST DATA USED FOR THIS P. J. EXECUTION                              ESTA  59
      CALL INLIST(TITLE)                                                 ESTA  60
C                                                                        ESTA  61
      IF(I .NE. NPJ) GO TO 1100                                          ESTA  62
      DO 800 L=1,3                                                       ESTA  63
      ICFLG = 0                                                          ESTA  64
      ICLASS = L                                                         ESTA  65
   15 CONTINUE                                                           ESTA  66
      IF(IPFLG .EQ. 1) GO TO 1000                                        ESTA  67
      IF(ICFLG .EQ. 0) GO TO 20                                          ESTA  68
C                                                                        ESTA  69
      GO TO 800                                                          ESTA  70
C                                                                        ESTA  71
   20 ISRC = 1                                                           ESTA  72
C                                                                        ESTA  73
   25 CONTINUE                                                           ESTA  74
C  25 READ SOURCE/DEVICE FILE OUTPUT FROM CONCEF.                        ESTA  75
C     IF END OF FILE GO TO 60                                            ESTA  76
   32 READ(9,END=60) NREGON,ISIC(ISRC),ISITE(ISRC),IPRC,ICID(ISRC),      ESTA  77
     1ITYPE(ISRC),          IPJ(ISRC),EFF(1,ISRC),EFF(2,ISRC),          ESTA  78
     2 EXEM(1,ISRC),EXEM(2,ISRC),PRATE(ISRC),SHIFT(ISRC),HS(ISRC),       ESTA  79
     3 DIA(ISRC),VEL(ISRC),TEMP(ISRC),BTU(ISRC),(EXEFF(M,ISRC),M=1,2),   ESTA  80
     4          GVOL(ISRC),COSTI(ISRC),(FRATE(M,ISRC),M=1,4),            ESTA  81
     5(FQTY(M,ISRC),M=1,4),USEF(ISRC),AEM(ISRC),IGAS(ISRC),XNP(ISRC)     ESTA  82
         ISITE(ISRC) = ISITE(ISRC) * 100 + IPRC                          ESTA  83
   30 IF(IPJ(ISRC) .EQ. NPJ) GO TO 35                                    ESTA  84
      IPFLG = 1                                                          ESTA  85
      GO TO 45                                                           ESTA  86
   35 CONTINUE                                                           ESTA  87
      IF (ITYPE(ISRC) .EQ. PTYPE(L)) GO TO 40                            ESTA  88
      ICFLG = 1                                                          ESTA  89
      GO TO 45                                                           ESTA  90
   40 CONTINUE                                                           ESTA  91
      IF(ISIC(ISRC) .EQ. ISAV1 .AND. ISITE(ISRC) .EQ. ISAV2) GO TO 55    ESTA  92
   45 CONTINUE                                                           ESTA  93
      ISAV1 = ISIC(ISRC)                                                 ESTA  94
      ISAV2 = ISITE(ISRC)                                                ESTA  95
      IF(INITL .EQ. 0) GO TO 50                                          ESTA  96
      BACKSPACE 9                                                        ESTA  97
      ISRC = ISRC - 1                                                    ESTA  98
      IF(ISRC.EQ. 0 .AND. ICFLG .EQ. 1) GO TO 800                        ESTA  99
      IF(ISRC.EQ. 0 .AND. IPFLG .EQ. 1) GO TO 1000                       ESTA 100
      IF (ISRC .EQ. 0) ISRC = 1                                          ESTA 101
      GO TO 70                                                           ESTA 102
   50 CONTINUE                                                           ESTA 103
      INITL = 1                                                          ESTA 104
   55 ISRC = ISRC +1                                                     ESTA 105
      GO TO 25                                                           ESTA 106
   60 CONTINUE                                                           ESTA 107
C END OF FILE ON COST INPUT                                              ESTA 108
      IEND = 1                                                           ESTA 109
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```
      IF (ISRC .EQ. 1) GO TO 1500                                          ESTA 110
          ISRC = ISRC - 1                                                  ESTA 111
   70 CONTINUE                                                             ESTA 112
C APPLY EMISSION STANDARDS TO THE SOURCE JUST INPUT.                       ESTA 113
C                                                                          ESTA 114
      DO 700 J=1,2                                                         ESTA 115
      IPOL = J                                                             ESTA 116
C   COMPUTE POTENTIAL EMISSION PER SOURCE                                  ESTA 117
      IF(EXEFF(J,1) .EQ. 1.0) GO TO 65                                     ESTA 118
      PEMN =  EXEM(J,1) / (1. - EXEFF(J,1)) * USEF(1)                      ESTA 119
      GO TO 75                                                             ESTA 120
   65 CONTINUE                                                             ESTA 121
      WRITE (8,903) ISIC(1),ISITE(1),J,EXEFF(J,1)                          ESTA 122
  903 FORMAT('0INP02- SOURCE ',I4,I5,' EXISTING DEVICE EFFICIENCY FOR POESTA 123
     .LLUTANT ',I1,' IS 100% OR GREATER')                                  ESTA 124
          IERR = 1                                                         ESTA 125
      GO TO 700                                                            ESTA 126
C                                                                          ESTA 127
   75 IF (ICLASS .NE. 1) GO TO 100                                         ESTA 128
C   COMPUTE DESIGN EMISSION RATE PER SOURCE                                ESTA 129
      SBTU = 0.0                                                           ESTA 130
      DO  80 N= 1,4                                                        ESTA 131
   80     SBTU = SBTU + FRATE(N,1)                                         ESTA 132
        OPHRS = 2920.0 * SHIFT(1)                                          ESTA 133
          DER = BTU(1) / SBTU * OPHRS * EXEM(IPOL,1)                       ESTA 134
  100 CONTINUE                                                             ESTA 135
      IF(TAB01(1,J,L) .GE. 1) CALL EST01                                   ESTA 136
      IF(TAB02(1,J,L) .GE. 1) CALL EST02                                   ESTA 137
      IF(TAB03(1,J,L) .GE. 1) CALL EST03                                   ESTA 138
      IF(TAB04(1,J,L) .GE. 1) CALL EST04                                   ESTA 139
      IF(TAB05(1,J,L) .LE. 0) GO TO 110                                    ESTA 140
      CALL EST05                                                           ESTA 141
          KK = 1                                                           ESTA 142
      GO TO 500                                                            ESTA 143
  110 CONTINUE                                                             ESTA 144
      IF(TAB06(1,J,L) .LE. 0) GO TO 120                                    ESTA 145
      CALL EST06                                                           ESTA 146
          KK = 2                                                           ESTA 147
      GO TO 500                                                            ESTA 148
  120 CONTINUE                                                             ESTA 149
      IF(TAB07(1,J,L) .LE. 0) GO TO 130                                    ESTA 150
      CALL EST07                                                           ESTA 151
          KK = 3                                                           ESTA 152
      GO TO 500                                                            ESTA 153
  130 CONTINUE                                                             ESTA 154
      IF(TAB08(1,J,L) .LE. 0) GO TO 140                                    ESTA 155
      CALL EST08                                                           ESTA 156
          KK = 4                                                           ESTA 157
      GO TO 500                                                            ESTA 158
  140 CONTINUE                                                             ESTA 159
      IF(TAB09(1,J,L) .LE. 0) GO TO 150                                    ESTA 160
      CALL EST09                                                           ESTA 161
          KK = 5                                                           ESTA 162
      GO TO 500                                                            ESTA 163
  150 CONTINUE                                                             ESTA 164
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      IF(TAB10(1,J,L) .LE. 0) GO TO 160                                 ESTA 165
      CALL EST10                                                        ESTA 166
          KK = 6                                                        ESTA 167
      GO TO 500                                                         ESTA 168
  160 CONTINUE                                                          ESTA 169
      IF(TAB11(1,J,L) .LE. 0) GO TO 170                                 ESTA 170
      CALL EST11                                                        ESTA 171
          KK = 7                                                        ESTA 172
      GO TO 500                                                         ESTA 173
  170 CONTINUE                                                          ESTA 174
      IF(TAB12(1,J,L) .LE. 0) GO TO 180                                 ESTA 175
      CALL EST12                                                        ESTA 176
          KK = 8                                                        ESTA 177
      GO TO 500                                                         ESTA 178
  180 CONTINUE                                                          ESTA 179
      IF(TAB13(1,J,L) .LE. 0) GO TO 190                                 ESTA 180
      CALL EST13                                                        ESTA 181
          KK = 9                                                        ESTA 182
      GO TO 500                                                         ESTA 183
  190 CONTINUE                                                          ESTA 184
      IF(TAB14(1,J,L) .LE. 0) GO TO 200                                 ESTA 185
      CALL EST14                                                        ESTA 186
          KK = 10                                                       ESTA 187
      GO TO 500                                                         ESTA 188
  200 CONTINUE                                                          ESTA 189
      IF(TAB15(1,J,L) .LE. 0) GO TO 210                                 ESTA 190
      CALL EST15                                                        ESTA 191
          KK = 11                                                       ESTA 192
      GO TO 500                                                         ESTA 193
  210 CONTINUE                                                          ESTA 194
      IF(TAB16(1,J,L) .LE. 0) GO TO 220                                 ESTA 195
      CALL EST16                                                        ESTA 196
          KK = 12                                                       ESTA 197
      GO TO 500                                                         ESTA 198
  220 CONTINUE                                                          ESTA 199
      IF(TAB17(1,J,L) .LE. 0) GO TO 230                                 ESTA 200
      CALL EST17                                                        ESTA 201
          KK = 13                                                       ESTA 202
      GO TO 500                                                         ESTA 203
  230 CONTINUE                                                          ESTA 204
      IF(TAB18(1,J,L) .LE. 0) GO TO 240                                 ESTA 205
      CALL EST18                                                        ESTA 206
          KK = 14                                                       ESTA 207
      GO TO 500                                                         ESTA 208
  240 CONTINUE                                                          ESTA 209
      IF(TAB19(1,J,L) .LE. 0) GO TO 250                                 ESTA 210
      CALL EST19                                                        ESTA 211
          KK = 15                                                       ESTA 212
      GO TO 500                                                         ESTA 213
  250 CONTINUE                                                          ESTA 214
      IF(TAB20(1,J,L) .LE. 0) GO TO 260                                 ESTA 215
      CALL EST20                                                        ESTA 216
          KK = 16                                                       ESTA 217
      GO TO 500                                                         ESTA 218
  260 CONTINUE                                                          ESTA 219
```

```
      IF(TAB21(1,J,L) .GE. 1) CALL EST21                                ESTA 220
      IF(TAB22(1,J,L) .GE. 1) CALL EST22                                ESTA 221
      IF(TAB23(1,J,L) .GE. 1) CALL EST23                                ESTA 222
      IF(TAB24(1,J,L) .GE. 1) CALL EST24                                ESTA 223
      IF(TAB25(1,J,L) .GE. 1) CALL EST25                                ESTA 224
      IF(TAB26(1,J,L) .GE. 1) CALL EST26                                ESTA 225
      GO TO 700                                                         ESTA 226
  500 CONTINUE                                                          ESTA 227
      IF (NREG .EQ. 0) GO TO 598                                        ESTA 228
          NCD1 = 0                                                      ESTA 229
          NSIC = 0                                                      ESTA 230
          NSITE = 0                                                     ESTA 231
          COSTN1 = 1.0E+9                                               ESTA 232
          EFFN(1) = 0.0                                                 ESTA 233
          EFFN(2) = 0.0                                                 ESTA 234
      IF (IBURN .NE. 1) GO TO 505                                       ESTA 235
      IBURN = 0                                                         ESTA 236
      NSIC = ISIC(1)                                                    ESTA 237
      NSITE = ISITE(1)                                                  ESTA 238
      COSTN1 = 0.0                                                      ESTA 239
      AEMN = 0.0                                                        ESTA 240
      EXEMN = EXEM(IPOL,1)                                              ESTA 241
      EFFN(1) = 1.0                                                     ESTA 242
      EFFN(2) = 1.0                                                     ESTA 243
      IPJN = IPJ(1)                                                     ESTA 244
      GO TO 595                                                         ESTA 245
  505 CONTINUE                                                          ESTA 246
      EFFSVE = 0.0                                                      ESTA 247
      COSSVE = 1.0E+9                                                   ESTA 248
          IFLAG = 0                                                     ESTA 249
      IF (EXEM(IPOL,1)   .LE. 0.0) GO TO 598                            ESTA 250
      IF (AEM(1)   .LT. EXEM(IPOL,1)  ) GO TO 510                       ESTA 251
          NSIC = ISIC(1)                                                ESTA 252
          NSITE = ISITE(1)                                              ESTA 253
          NCD1 = 0                                                      ESTA 254
          COSTN1= 0.0                                                   ESTA 255
          AEMN = AEM(1)                                                 ESTA 256
          EXEMN = EXEM(IPOL,1)                                          ESTA 257
      DO 507 N=1,4                                                      ESTA 258
          FQN(N) = FQTY(N,1)                                            ESTA 259
  507 CONTINUE                                                          ESTA 260
          NGAS = 0                                                      ESTA 261
          IPJN  = IPJ(1)                                                ESTA 262
      GO TO 595                                                         ESTA 263
  510 CONTINUE                                                          ESTA 264
      DO 590 LL = 1,ISRC                                                ESTA 265
  520     CEM = EXEM(IPOL,LL)* (1.0 - EFF(IPOL,LL))                     ESTA 266
      IF (EFF(IPOL,LL) .LT. EFFSVE    ) GO TO 530                      ESTA 267
      IF (EFF(IPOL,LL) .NE. EFFSVE) GO TO 525                           ESTA 268
      IF (COSTI(LL) .GT. COSSVE) GO TO 530                              ESTA 269
  525 CONTINUE                                                          ESTA 270
          LLSVE = LL                                                    ESTA 271
      EFFSVE = EFF(IPOL,LL)                                             ESTA 272
      COSSVE = COSTI(LL)                                                ESTA 273
  530 IF (CEM .GT. AEM(1))   GO TO 590                                  ESTA 274
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```
      IF (COSTI(LL) .GT. COSTN1) GO TO 590                                  ESTA 275
          NSIC = ISIC(LL)                                                   ESTA 276
          NSITE = ISITE(LL)                                                 ESTA 277
          NCD1 = ICID(LL)                                                   ESTA 278
          COSTN1 = COSTI(LL)                                                ESTA 279
          EFFN(1) = EFF(1,LL)                                               ESTA 280
          EFFN(2) = EFF(2,LL)                                               ESTA 281
          AEMN = AEM(1)                                                     ESTA 282
      IF(IPOL .NE. 1) GO TO 540                                             ESTA 283
      IF(ICID(LL) .GE. 30 .AND. ICID(LL) .LE. 32) AEMN=AEM(LL)              ESTA 284
  540     EXEMN = EXEM(IPOL,LL)                                             ESTA 285
      DO 535 N=1,4                                                          ESTA 286
          FQN(N) = FQTY(N,LL)                                               ESTA 287
  535 CONTINUE                                                              ESTA 288
          NGAS = IGAS(LL)                                                   ESTA 289
          IPJN = IPJ(LL)                                                    ESTA 290
  590 CONTINUE                                                              ESTA 291
      IF (NSIC .NE. 0) GO TO 595                                            ESTA 292
          NSIC = ISIC(1)                                                    ESTA 293
          NSITE = ISITE(1)                                                  ESTA 294
          NCD1  = ICID(LLSVE)                                               ESTA 295
          COSTN1 = COSTI(LLSVE)                                             ESTA 296
          EFFN(1) = EFF(1,LLSVE)                                            ESTA 297
          EFFN(2) = EFF(2,LLSVE)                                            ESTA 298
          AEMN = AEM(1)                                                     ESTA 299
      IF(IPOL .NE. 1) GO TO 545                                             ESTA 300
      IF(ICID(LL) .GE. 30 .AND. ICID(LL) .LE. 32) AEMN=AEM(LL)              ESTA 301
  545     EXEMN = EXEM(IPOL,1)                                              ESTA 302
      DO 593 N=1,4                                                          ESTA 303
          FQN(N) = FQTY(N,LLSVE)                                            ESTA 304
  593 CONTINUE                                                              ESTA 305
          NGAS = IGAS(LLSVE)                                                ESTA 306
          IPJN = IPJ(1)                                                     ESTA 307
      IFLAG = 2                                                             ESTA 308
      IF (AEMN .NE. -1.0) GO TO 595                                         ESTA 309
          IFLAG = 1                                                         ESTA 310
      IERR = 1                                                              ESTA 311
  595 CONTINUE                                                              ESTA 312
      IF (EFFN(IPOL) .NE. 0.0) GO TO 610                                    ESTA 313
      NCD1 = 0                                                              ESTA 314
      COSTN1 = 0.0                                                          ESTA 315
  610 CONTINUE                                                              ESTA 316
  600 CONTINUE                                                              ESTA 317
          REFF = (PEMN - AEMN) / PEMN                                       ESTA 318
      WRITE (20) NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMN,        ESTA 319
     .           EXEMN,REFF,(FQN(N),N=1,4),NGAS,IPOL,IPJN,ICLASS,NREG,      ESTA 320
     .           IFLAG                                                      ESTA 321
  598 CONTINUE                                                              ESTA 322
      GO TO (110,120,130,140,150,160,170,180,190,200,210,220,230,240,       ESTA 323
     . 250,260),KK                                                          ESTA 324
  700 CONTINUE                                                              ESTA 325
  END OF POLLUTANT LOOP                                                     ESTA 326
      IF (IEND .EQ. 1) GO TO 1500                                           ESTA 327
      GO TO 15                                                              ESTA 328
  800 CONTINUE                                                              ESTA 329
```

```
C END CATEGORY LOOP                                                    ESTA 330
 1000 CONTINUE                                                         ESTA 331
C END OF JURISDICTION LOOP                                             ESTA 332
      GO TO 1500                                                       ESTA 333
 1100 CONTINUE                                                         ESTA 334
      WRITE (6,911)                                                    ESTA 335
      WRITE (6,900) NPJ,JPJ                                            ESTA 336
  900 FORMAT(' INP01- POLITICAL JURISDICTION NO.',I3,' NOT IN ORDER-RUN ESTA 337
     .TERMINATED AT COMPLETION OF POLITICAL JURISDICTION NO.',I3)      ESTA 338
 1500 CONTINUE                                                         ESTA 339
      REWIND 8                                                         ESTA 340
      REWIND 20                                                        ESTA 341
      CALL OPLIST                                                      ESTA 342
      IF (IERR .EQ. 0) GO TO 850                                       ESTA 343
      CALL ERROUT                                                      ESTA 344
  850 CONTINUE                                                         ESTA 345
      STOP                                                             ESTA 346
      END                                                              ESTA 347
```

SUBPROGRAM PRESET

PURPOSE

To initialize data to be used if none is input.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G Ver.18

INPUT

DATA statements

OUTPUT

COMMON/BURN/

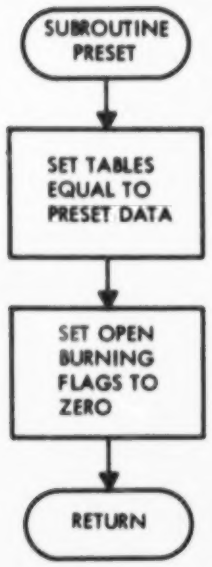
COMMON/TABS/

PROCEDURE

Each data variable is set equal to preset data in the DATA statements. All open burning flags set to zero.

SUBROUTINES

None


SUBROUTINE
PRESET
SET TABLES
EQUAL TO
PRESET DATA
SET OPEN
BURNING
FLAGS TO
ZERO
RETURN

```
      SUBROUTINE PRESET                                                 PRES    1
C                                                                       PRES    2
      DIMENSION T5(11,2,3),T6(11,2,3),T7(11,2,3),T8(9,2,3),T9(9,2,3),   PRES    3
     .          T10(9,2,3),T11(50,2,3),T12(28,2,3),T13(2,2,3),T14(2,2,3)PRES    4
     .         ,T15(4,2,3),T16(2,2,3),T17(2,2,3),T18(23,2,3),T19(23,2,3)PRES    5
     .         ,T20(23,2,3),T21(2,2,3),T22(2,2,3),T26(2,2,3)            PRES    6
C                                                                       PRES    7
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,     PRES    8
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                   PRES    9
     .            NOBN19,NOBN20                                         PRES   10
C                                                                       PRES   11
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),PRES   12
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),        PRES   13
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),        PRES   14
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),        PRES   15
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),        PRES   16
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),        PRES   17
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                       PRES   18
C                                                                       PRES   19
      DATA T5                                                           PRES   20
     1    /0.0,1.,.1980,100000.0,100.0,200000.0,100.0,500000.0,100.0,   PRES   21
     2 1000000000.0,100.0,                                             PRES   22
     3    11*0.0,                                                      PRES   23
     4     0.0,1.,.1980,100000.0,100.0,200000.0,100.0,500000.0,100.0,   PRES   24
     5 1000000000.0,100.0,0.0,20.0,4.0,1000.0,60.0,                    PRES   25
     6    6000.0,60.0,30000.0,300.0,  1.E9,300.0,                      PRES   26
     7     0.0,1.,.1980,100000.0,100.0,200000.0,100.0,500000.0,100.0,   PRES   27
     8 1000000000.0,100.0,0.0,20.0,4.0,1000.0,60.0,                    PRES   28
     9    6000.0,60.0,30000.0,300.0,  1.E9,300.0/                      PRES   29
C                                                                       PRES   30
      DATA T6                                                           PRES   31
     1          /0.0,1.,.1980,100000.0,100.0,200000.0,1000.0,          PRES   32
     2          500000.0,1000.0,1000000000.,100.,                      PRES   33
     3           11*0.0,                                               PRES   34
     4           0.0,1.,.1980,100000.0,100.0,200000.0,100.0,           PRES   35
     5          500000.0,100.00,1000000000.,100.,                      PRES   36
     6           0.0,.01,0.2,3.0,0.2,20.0,0.2,100.0,1.0,1.E6,1.E4,     PRES   37
     7           0.0,1.,.1980,100000.0,100.0,200000.0,100.0,           PRES   38
     8          500000.0,100.00,1000000000.,100.,                      PRES   39
     9           0.0,.01,0.2,3.0,0.2,20.0,0.2,100.0,1.0,1.E6,1.E4/     PRES   40
C                                                                       PRES   41
      DATA T7                                                           PRES   42
     1 /0.0,1.,.198,1.E5,100.,2.E5,100.,5.E5,100.,1.E9,100.,           PRES   43
     2  11*0.0,                                                        PRES   44
     3  0.0,1.,.198,1.E5,100.,2.E5,100.,5.E5,100.,1.E9,100.,           PRES   45
     4  0.0,10.,1.8,100.,10.,1.E4,300.,1.E5,300.,1.E6,300.,            PRES   46
     5  0.0,1.,.198,1.E5,100.,2.E5,100.,5.E5,100.,1.E9,100.,           PRES   47
     6  0.0,10.,1.8,100.,10.,1.E4,300.,1.E5,300.,1.E6,300./            PRES   48
C                                                                       PRES   49
      DATA T8                                                           PRES   50
     1  /0.0,.0010,6.0,25.0,6.0,5000.0,1.0,100000.0,0.38,              PRES   51
     2    0.0,.001,0.6,10.0,0.6,10000.0,.20,100000.0,.20,              PRES   52
     3     36*0.0/                                                     PRES   53
C                                                                       PRES   54
```

```
      DATA T9                                                                  PRES  55
     1   /0.0,.001,1.5,40.0,1.5,1000.0,0.6,100000.0,0.6,                       PRES  56
     2     0.0,.001,0.5,10.0,0.5,5000.0,0.18,100000.,0.18,                      PRES  57
     3     36*0.0/                                                              PRES  58
C                                                                              PRES  59
      DATA T10                                                                 PRES  60
     1   /0.0,.001,1.5,40.0,1.5,1000.0,0.6,100000.0,0.6,                       PRES  61
     2    0.0,.001,0.6,10.0,0.6,10000.0,0.11,100000.0,0.11,                     PRES  62
     3     36*0.0/                                                             PRES  63
C                                                                              PRES  64
C                                                                              PRES  65
      DATA T11                                                                 PRES  66
     1/0.0,50.,.001,6.,28.8,6.,6760.,.1,100.,.001,6.,72.3,6.,16910.,.1,       PRES  67
     2150.,.001,6.,123.8,6.,29500.,.1,225.,.001,6.,214.,6.,50200.,.1,         PRES  68
     3300.,.001,6.,313.,6.,74150.,.1,600.,.CC1,6.,782.,6.,1.E5,.1587,         PRES  69
     4800.,.C01,6.,1161.,6.,1.E5,.212,0.,50.,.001,.6,135.,.6,31650.,.01,      PRES  70
     5100.,.CC1,.6,341.,.6,79400.,.01,150.,.001,.6,589.,.6,100000.,           PRES  71
     6.01272,225.,.001,.6,1289.,.6,100000.,.0228,300.,.001,.6,1863.,.6,       PRES  72
     7100000.,.0304.600.,.001,.6,4680.,.6,100000.,.0608,800.,.001,.6,         PRES  73
     86850.,.6,100000.,.0810,200*0./                                          PRES  74
C                                                                              PRES  75
      DATA T12                                                                 PRES  76
     1/0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  77
     2131.,32.,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  78
     3183900.,                                                                PRES  79
     1 0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  80
     2131.,32.,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  81
     3183900.,                                                                PRES  82
     1 0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  83
     2131.,37 ,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  84
     3183900.,                                                                PRES  85
     1 0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  86
     2131.,32.,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  87
     3183900.,                                                                PRES  88
     1 0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  89
     2131.,32.,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  90
     3183900.,                                                                PRES  91
     1 0.0,68.,1000.,16.4,1.,.001926,32.8,2.,49.1,4.5,65.5,8.,98.4,17.5,      PRES  92
     2131.,32.,164.,50.,230.,100.,328.,200.,491.,450.,656.,800.,10000.,       PRES  93
     3183900./                                                                PRES  94
C                                                                              PRES  95
      DATA T13/0.0,500.0,0.0,500.0,0.0,500.0,0.0,500.0,0.0,500.0,              PRES  96
     .         0.0,500.0/                                                      PRES  97
      DATA T14/0.0,2000.0,0.0,2000.0,0.0,2000.0,0.0,2000.0,0.0,2000.0,         PRES  98
     .         0.0,2000.0/                                                     PRES  99
,C                                                                             PRES 100
      DATA T15                                                                 PRES 101
     1  /12*0.0,0.0,0.1,400000.,0.05,4*0.0,0.0,0.3,200.0,0.2/                  PRES 102
C                                                                              PRES 103
      DATA T16/0.0,0.15,0.0,0.05,0.0,0.15,0.0,0.15,0.0,0.15,0.0,0.2/           PRES 104
C                                                                              PRES 105
      DATA T17                                                                 PRES 106
     1   /2*0.0,0.0,0.10,2*0.0,0.0,.05,2*0.0,0.0,0.4/                         PRES 107
C                                                                              PRES 108
      DATA T18.                                                                PRES 109
```

```
     1    /0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,  PRES 110
     2    91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0, PRES 111
     3    2010.0,10000000.0,5850.0,20000000.0,9000.0,                    PRES 112
     4     0.0,100.0,0.551,400.0,1.4,1000.0,2.58,4000.0,6.52,10000.0,    PRES 113
     5    12.0,40000.0,30.5,60000.0,40.0,100000.0,44.6,400000.0,58.5,    PRES 114
     6    1000000.0,69.0,6000000.0,92.7,                                 PRES 115
     7     0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,  PRES 116
     8    91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0, PRES 117
     9    2010.0,10000000.0,5850.0,20000000.0,9000.0,                    PRES 118
     A     0.0,100.0,0.551,400.0,1.4,1000.0,2.58,4000.0,6.52,10000.0,    PRES 119
     B    12.0,40000.0,30.5,60000.0,40.0,100000.0,44.6,400000.0,58.5,    PRES 120
     C    1000000.0,69.0,6000000.0,92.7,                                 PRES 121
     D     0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,  PRES 122
     E    91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0, PRES 123
     F    2010.0,10000000.0,5850.0,20000000.0,9000.0,0.0,10.0,0.3,15.0,  PRES 124
     G    0.3,20.0,0.3,25.0,0.3,30.0,0.3,35.0,0.3,40.0,0.3,50.0,0.3,     PRES 125
     H    100.0,0.5,70000.0,50.0,70000.0,350.0/                          PRES 126
C                                                                        PRES 127
      DATA T19                                                           PRES 128
     1   /0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,   PRES 129
     2   91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0,  PRES 130
     3   2010.0,10000000.0,5850.0,20000000.0,9000.0,0.0,50.0,0.24,300.0, PRES 131
     4    1.2,500.0,1.77,900.0,2.62,1500.0,3.54,4100.0,6.01,11000.0,     PRES 132
     5    10.63,30000.0,22.22,40000.0,28.3,60000.0,40.0,10.E6,40.,       PRES 133
     6    0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,   PRES 134
     7   91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0,  PRES 135
     8   2010.0,10000000.0,5850.0,20000000.0,9000.0,0.0,50.0,0.24,300.0, PRES 136
     9    1.2,500.0,1.77,900.0,2.62,1500.0,3.54,4100.0,6.01,11000.0,     PRES 137
     A    10.63,30000.0,22.22,40000.0,28.3,60000.0,40.0,1000000.0,40.0,  PRES 138
     B    0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,   PRES 139
     C   91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0,  PRES 140
     D   2010.0,10000000.0,5850.0,20000000.0,9000.0,                     PRES 141
     E                      0.0,10.0,0.3,100.0,0.3,300.0,0.87,320.0,     PRES 142
     F    1.0,680.0,2.0,1000.0,2.9,4000.0,10.0,9000.0,20.0,20000.0,      PRES 143
     G    40.0,70000.0,100.0,200000.0,200.0/                             PRES 144
C                                                                        PRES 145
      DATA T20                                                           PRES 146
     1   /46*0.0,     '                                                 PRES 147
     2    0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,   PRES 148
     3   91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0,  PRES 149
     4   2010.0,10000000.0,5850.0,20000000.0,9000.0,                     PRES 150
     5          0.0,  1.0,.0126,400.0,0.7,1000.0,1.29,4000.0,3.26,       PRES 151
     6          10000.0,6.0,40000.0,15.25,60000.0,20.0,100000.0,22.3,    PRES 152
     7         400000.,29.2,6000000.,46.35,10.E6,50.,                    PRES 153
     8    0.0,736.0,10.0,1000.0,12.2,2000.0,19.5,10000.0,57.4,20000.0,   PRES 154
     9   91.2,100000.0,268.0,200000.0,428.0,1000000.0,1250.0,2000000.0,  PRES 155
     A   2010.0,10000000.0,5850.0,20000000.0,9000.0,                     PRES 156
     B    0.0,50.0,0.1,100.0,0.1,200.0,0.1,300.0,0.1,400.0,0.1,          PRES 157
     C    500.0,0.1,1000.0,2.0,2828.0,5.0,5000.0,8.0,10000.0,            PRES 158
     D    14.1,50000.0,57.0/                                             PRES 159
C                                                                        PRES 160
      DATA T21/0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0/         PRES 161
      DATA T22/0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0/         PRES 162
      DATA T26/0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0,0.0,1.0/         PRES 163
C                                                                        PRES 164
```

```
      DO 500 L=1,3                                                      PRES 165
      DO 400 J=1,2                                                      PRES 166
      TAB01(1,J,L) = 0.0                                                PRES 167
      TAB02(1,J,L) = 0.0                                                PRES 168
      TAB23(1,J,L) = 0.0                                                PRES 169
      TAB24(1,J,L) = 0.0                                                PRES 170
      TAB25(1,J,L) = 0.0                                                PRES 171
C                                                                       PRES 172
      DO 20 N=1,11                                                      PRES 173
      TAB03(N,J,L) = 0.0                                                PRES 174
      TAB04(N,J,L) = 0.0                                                PRES 175
      TAB05(N,J,L) = T5(N,J,L)                                          PRES 176
      TAB06(N,J,L) = T6(N,J,L)                                          PRES 177
      TAB07(N,J,L) = T7(N,J,L)                                          PRES 178
   20 CONTINUE                                                          PRES 179
      DO 30 N=1,9                                                       PRES 180
      TAB08(N,J,L) = T8(N,J,L)                                          PRES 181
      TAB09(N,J,L) = T9(N,J,L)                                          PRES 182
      TAB10(N,J,L) = T10(N,J,L)                                         PRES 183
   30 CONTINUE                                                          PRES 184
      DO 40 N=1,50                                                      PRES 185
      TAB11(N,J,L) = T11(N,J,L)                                         PRES 186
   40 CONTINUE                                                          PRES 187
      DO 50 N=1,28                                                      PRES 188
      TAB12(N,J,L) = T12(N,J,L)                                         PRES 189
   50 CONTINUE                                                          PRES 190
      DO 60 N=1,4                                                       PRES 191
      TAB15(N,J,L) = T15(N,J,L)                                         PRES 192
   60 CONTINUE                                                          PRES 193
      DO 70 N=1,23                                                      PRES 194
      TAB18(N,J,L) = T18(N,J,L)                                         PRES 195
      TAB19(N,J,L) = T19(N,J,L)                                         PRES 196
      TAB20(N,J,L) = T20(N,J,L)                                         PRES 197
   70 CONTINUE                                                          PRES 198
      DO 80 N=1,2                                                       PRES 199
      TAB13(N,J,L) = T13(N,J,L)                                         PRES 200
      TAB14(N,J,L) = T14(N,J,L)                                         PRES 201
      TAB16(N,J,L) = T16(N,J,L)                                         PRES 202
      TAB17(N,J,L) = T17(N,J,L)                                         PRES 203
      TAB21(N,J,L) = T21(N,J,L)                                         PRES 204
      TAB22(N,J,L) = T22(N,J,L)                                         PRES 205
      TAB26(N,J,L) = T26(N,J,L)                                         PRES 206
   80 CONTINUE                                                          PRES 207
  400 CONTINUE                                                          PRES 208
  500 CONTINUE                                                          PRES 209
      NOBN02 = 0                                                        PRES 210
      NOBN03 = 0                                                        PRES 211
      NOBN04 = 0                                                        PRES 212
      NOBN05 = 0                                                        PRES 213
      NOBN06 = 0                                                        PRES 214
      NOBN07 = 0                                                        PRES 215
      NOBN12 = 0                                                        PRES 216
      NOBN15 = 0                                                        PRES 217
      NOBN16 = 0                                                        PRES 218
      NOBN17 = 0                                                        PRES 219
      NOBN18 = 0                                                        PRES 220
      NOBN19 = 0                                                        PRES 221
      NOBN20 = 0                                                        PRES 222
      RETURN                                                            PRES 223
      END                                                               PRES 224
```

SUBPROGRAM INLIST

PURPOSE

To list input or preset data for each standard which is to be executed.

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G Ver.18

INPUT

COMMON/BURN/

COMMON/DVICE/

COMMON/TABS/

OUTPUT

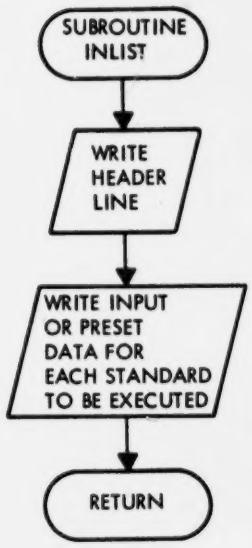
Input data report (PRINTER)

PROCEDURE

For each standard picked, print the input or preset data.

SUBROUTINES

None


SUBROUTINE INLIST
WRITE HEADER LINE
WRITE INPUT OR PRESET DATA FOR EACH STANDARD TO BE EXECUTED
RETURN

```
      SUBROUTINE INLIST (TITLE)                                          INLI   1
C  INLIST-LIST INPUT DATA OF THOSE STANDARDS CHOSEN.                      INLI   2
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,      INLI   3
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                   INLI   4
     .             NOBN19,NOBN20                                         INLI   5
      COMMON /DVICE/           IERR,IREGON,IBURN                         INLI   6
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),INLI   7
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),         INLI   8
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),         INLI   9
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),         INLI  10
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),         INLI  11
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),         INLI  12
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                        INLI  13
      INTEGER TITLE(5)                                                   INLI  14
C                                                                        INLI  15
      WRITE (6,99)                                                       INLI  16
   99 FORMAT('1')                                                        INLI  17
      LCNT=0                                                             INLI  18
      IF(NPJ.NE. 1) GO TO 100                                            INLI  19
      WRITE (6,1) IREGON,TITLE                                           INLI  20
    1 FORMAT('1',T55,'EMISSION STANDARD INPUT'//T2,'REGION ',I3,T16,5A4) INLI  21
  100 CONTINUE                                                           INLI  22
      WRITE (6,2) NPJ,NAMEPJ                                             INLI  23
    2 FORMAT('0',   'POLITICAL JURISDICTION ',I2,T32,5A4)                INLI  24
      DO 110 K=1,3                                                       INLI  25
      DO 110 J=1,2                                                       INLI  26
      IF(TAB01(1,J,K) .LE. 0.0) GO TO 110                                INLI  27
      WRITE(6,3) J,K,TAB01(1,J,K)                                        INLI  28
    3 FORMAT('0',   'TAB01(1,',I1,',',I1,')= ',F2.0)                     INLI  29
          LCNT = LCNT + 2                                                INLI  30
  110 CONTINUE                                                           INLI  31
      DO 120 K=1,3                                                       INLI  32
      DO 120 J=1,2                                                       INLI  33
      IF(TAB02(1,J,K) .LE. 0.0) GO TO 120                                INLI  34
      WRITE (6,4) J,K,TAB02(1,J,K)                                       INLI  35
    4 FORMAT('0',   'TAB02(1,',I1,',',I1,')= ',F2.0,',')                 INLI  36
      LCNT = LCNT + 2                                                    INLI  37
      IF (J .NE. 2 .OR. K .NE. 3) GO TO 115                              INLI  38
      WRITE(6,29) NOBN02                                                 INLI  39
   29 FORMAT(' ','NOBN02= ',I1,',')                                      INLI  40
      LCNT = LCNT + 1                                                    INLI  41
  115 CONTINUE                                                           INLI  42
  120 CONTINUE                                                           INLI  43
      DO 130 K=1,3                                                       INLI  44
      DO 130 J=1,2                                                       INLI  45
      IF(TAB03(1,J,K) .LE. 0.0) GO TO 130                                INLI  46
      WRITE (6,5) J,K,(TAB03(N,J,K),N=1,11)                              INLI  47
    5 FORMAT('0',   'TAB03(1,',I1,',',I1,')= ',F2.0,',',10(F3.0,','))    INLI  48
      LCNT = LCNT + 2                                                    INLI  49
      IF (J .NE. 2 .OR. K .NE. 3) GO TO 125                              INLI  50
      WRITE(6,30) NOBN03                                                 INLI  51
   30 FORMAT(' ','NOBN03= ',I1,',')                                      INLI  52
      LCNT = LCNT + 1                                                    INLI  53
  125 CONTINUE.                                                          INLI  54
```

```
        LCNT = LCNT + 3                                                    INLI  55
130 CONTINUE                                                               INLI  56
    DO 140 K=1,3                                                           INLI  57
    DO 140 J=1,2                                                           INLI  58
    IF(TAB04(1,J,K) .LE. 0.0) GO TO 140                                    INLI  59
    WRITE(6,6) J,K,(TAB04(N,J,K),N=1,11)                                   INLI  60
  6 FORMAT('0',    'TAB04(1,',I1,',',I1,')= ',F2.0,',',10(F3.0,','))       INLI  61
    LCNT = LCNT + 2                                                        INLI  62
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 135                                  INLI  63
    WRITE(6,31) NOBN04                                                     INLI  64
 31 FORMAT(' ','NOBN04= ',I1,',')                                          INLI  65
    LCNT = LCNT + 1                                                        INLI  66
135 CONTINUE                                                               INLI  67
140 CONTINUE                                                               INLI  68
    DO 150 K=1,3                                                           INLI  69
    DO 150 J=1,2                                                           INLI  70
    IF(TAB05(1,J,K) .LE. 0.0) GO TO 150                                    INLI  71
    WRITE(6,7) J,K,(TAB05(N,J,K),N=1,11)                                   INLI  72
  7 FORMAT('0',    'TAB05(1,',I1,',',I1,')= ',F2.0,',',                    INLI  73
   . 5(F11.0,F8.3,',',))                                                   INLI  74
    LCNT = LCNT + 2                                                        INLI  75
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 145                                  INLI  76
    WRITE(6,32) NOBN05                                                     INLI  77
 32 FORMAT(' ','NOBN05= ',I1,',')                                          INLI  78
    LCNT = LCNT + 1                                                        INLI  79
145 CONTINUE                                                               INLI  80
    IF(LCNT .LT. 56) GO TO 150                                             INLI  81
        LCNT = 0                                                           INLI  82
    WRITE (6,99)                                                           INLI  83
150 CONTINUE                                                               INLI  84
    DO 160 K=1,3                                                           INLI  85
    DO 160 J=1,2                                                           INLI  86
    IF(TAB06(1,J,K) .LE. 0.0) GO TO 160                                    INLI  87
    WRITE(6,8) J,K,(TAB06(N,J,K),N=1,11)                                   INLI  88
  8 FORMAT('0',    'TAB06(1,',I1,',',I1,')= ',F2.0,',',                    INLI  89
   . 5(F11.0,F8.3,',',))                                                   INLI  90
    LCNT = LCNT + 2                                                        INLI  91
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 155                                  INLI  92
    WRITE(6,33) NOBN06                                                     INLI  93
 33 FORMAT(' ','NOBN06= ',I1,',')                                          INLI  94
    LCNT = LCNT + 1                                                        INLI  95
155 CONTINUE                                                               INLI  96
    IF(LCNT .LT. 56) GO TO 160                                             INLI  97
        LCNT = 0                                                           INLI  98
    WRITE(6,99)                                                            INLI  99
160 CONTINUE                                                               INLI 100
    DO 170 K=1,3                                                           INLI 101
    DO 170 J=1,2                                                           INLI 102
    IF(TAB07(1,J,K) .LE. 0.0) GO TO 170                                    INLI 103
    WRITE(6,9) J,K,(TAB07(N,J,K),N=1,11)                                   INLI 104
  9 FORMAT('0',    'TAB07(1,',I1,',',I1,')= ',F2.0,',',                    INLI 105
   . 5(F11.0,F8.3,',',))                                                   INLI 106
    LCNT = LCNT + 2                                                        INLI 107
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 165                                  INLI 108
    WRITE(6,34) NOBN07                                                     INLI 109
```

```
 34 FORMAT(' ','NOBNC7=',I1,'.')                                        INLI 110
    LCNT = LCNT + 1                                                     INLI 111
100 CONTINUE                                                            INLI 112
    IF(LCNT .LT. 56) GO TO 170                                          INLI 113
        LCNT = 0                                                        INLI 114
    WRITE(6,99)                                                         INLI 115
170 CONTINUE                                                            INLI 116
    DO 180 K=1,3                                                        INLI 117
    DO 180 J=1,2                                                        INLI 118
    IF(TAB08(1,J,K) .LE. 0.0) GO TO 180                                 INLI 119
    WRITE (6,10) J,K,(TAB08(N,J,K),N=1,9)                               INLI 120
 10 FORMAT('0',   'TAB08(1,',I1,',',I1,')= ',F2.0,',',8(F12.3,','))     INLI 121
        LCNT = LCNT +2                                                  INLI 122
    IF(LCNT .LT. 56) GO TO 180                                          INLI 123
        LCNT = 0                                                        INLI 124
    WRITE(6,99)                                                         INLI 125
180 CONTINUE                                                            INLI 126
    DO 190 K=1,3                                                        INLI 127
    DO 190 J=1,2                                                        INLI 128
    IF(TAB09(1,J,K) .LE. 0.0) GO TO 190                                 INLI 129
    WRITE(6,11) J,K,(TAB09(N,J,K),N=1,9)                                INLI 130
 11 FORMAT('0',   'TAB09(1,',I1,',',I1,')= ',F2.0,',',8(F12.3,','))     INLI 131
        LCNT = LCNT +2                                                  INLI 132
    IF(LCNT .LT. 56) GO TO 190                                          INLI 133
        LCNT = 0                                                        INLI 134
    WRITE(6,99)                                                         INLI 135
190 CONTINUE                                                            INLI 136
    DO 200 K=1,3                                                        INLI 137
    DO 200 J=1,2                                                        INLI 138
    IF(TAB10(1,J,K) .LE. 0.0) GO TO 200                                 INLI 139
    WRITE(6,12) J,K,(TAB10(N,J,K),N=1,9)                                INLI 140
 12 FORMAT('0','TAB10(1,',I1,',',I1,')= ',F2.0,',',8(F12.3,','))        INLI 141
        LCNT = LCNT + 2                                                 INLI 142
    IF(LCNT .LT. 56) GO TO 200                                          INLI 143
        LCNT = 0                                                        INLI 144
    WRITE(6,99)                                                         INLI 145
200 CONTINUE                                                            INLI 146
    DO 210 K=1,3                                                        INLI 147
    DO 210 J=1,2                                                        INLI 148
    IF(TAB11(1,J,K) .LE. 0.0) GO TO 210                                 INLI 149
    WRITE(6,13) J,K,(TAB11(N,J,K),N=1,50)                               INLI 150
 13 FORMAT('0',   'TAB11(1,',I1,',',I1,')= ',F2.0,',',                  INLI 151
   .  6(T19,9(F11.3,',')/))                                             INLI 152
        LCNT = LCNT + 7                                                 INLI 153
    IF(LCNT .LT. 56) GO TO 210                                          INLI 154
        LCNT = 0                                                        INLI 155
    WRITE(6,99)                                                         INLI 156
210 CONTINUE                                                            INLI 157
    DO 220 K=1,3                                                        INLI 158
    DO 220 J=1,2                                                        INLI 159
    IF(TAB12(1,J,K) .LE. 0.0) GO TO 220                                 INLI 160
    WRITE(6,14) J,K,(TAB12(N,J,K),N=1,28)                               INLI 161
 14 FORMAT('0',  'TAB12(1,',I1,',',I1,')= ',F2.0,',',                   INLI 162
   .  3(T19,10(F11.3,',')/))                                            INLI 163
        LCNT = LCNT + 4                                                 INLI 164
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      IF (J .NE. 2 .OR. K .NE. 3) GO TO 215                              INLI 165
      WRITE(6,35) NOBN12                                                 INLI 166
   35 FORMAT(' ','NOBN12= ',I1,',')                                      INLI 167
      LCNT = LCNT + 1                                                    INLI 168
  215 CONTINUE                                                           INLI 169
      IF(LCNT .LT. 56) GO TO 220                                         INLI 170
          LCNT = 0                                                       INLI 171
      WRITE(6,99)                                                        INLI 172
  220 CONTINUE                                                           INLI 173
      DO 230 K=1,3                                                       INLI 174
      DO 230 J=1,2                                                       INLI 175
      IF(TAB13(1,J,K) .LE. 0.0) GO TO 230                                INLI 176
      WRITE(6,15) J,K,(TAB13(N,J,K),N=1,2)                               INLI 177
   15 FORMAT('0','TAB13(1,',I1,',',I1,')= ',F2.0,',',F7.2,',')           INLI 178
          LCNT = LCNT + 2                                                INLI 179
      IF(LCNT .LT. 56) GO TO 230                                         INLI 180
          LCNT = 0                                                       INLI 181
      WRITE(6,99)                                                        INLI 182
  230 CONTINUE                                                           INLI 183
      DO 240 K=1,3                                                       INLI 184
      DO 240 J=1,2                                                       INLI 185
      IF(TAB14(1,J,K) .LE. 0.0) GO TO 240                                INLI 186
      WRITE(6,16) J,K,(TAB14(N,J,K),N=1,2)                               INLI 187
   16 FORMAT('0','TAB14(1,',I1,',',I1,')= ',F2.0,',',F7.2,',')           INLI 188
          LCNT = LCNT +2                                                 INLI 189
      IF(LCNT .LT. 56) GO TO 240                                         INLI 190
          LCNT = 0                                                       INLI 191
      WRITE(6,99)                                                        INLI 192
  240 CONTINUE                                                           INLI 193
      DO 250 K=1,3                                                       INLI 194
      DO 250 J=1,2                                                       INLI 195
      IF(TAB15(1,J,K) .LE. 0.0) GO TO 250                                INLI 196
      WRITE(6,17) J,K,(TAB15(N,J,K),N=1,4)                               INLI 197
   17 FORMAT('0','TAB15(1,',I1,',',I1,')= ',F2.0,',',3(F8.1,','))        INLI 198
      LCNT = LCNT + 2                                                    INLI 199
      IF (J .NE. 2 .OR. K .NE. 3) GO TO 245                              INLI 200
      WRITE(6,36) NOBN15                                                 INLI 201
   36 FORMAT(' ','NOBN15= ',I1,',')                                      INLI 202
      LCNT = LCNT + 1                                                    INLI 203
  245 CONTINUE                                                           INLI 204
          LCNT = LCNT + 3                                                INLI 205
      IF(LCNT .LT. 56) GO TO 250                                         INLI 206
          LCNT = 0                                                       INLI 207
      WRITE(6,99)                                                        INLI 208
  250 CONTINUE                                                           INLI 209
      DO 260 K=1,3                                                       INLI 210
      DO 260 J=1,2                                                       INLI 211
      IF(TAB16(1,J,K) .LE. 0.0) GO TO 260                                INLI 212
      WRITE(6,18) J,K,(TAB16(N,J,K),N=1,2)                               INLI 213
   18 FORMAT('0','TAB16(1,',I1,',',I1,')= ',F2.0,',',F7.2,',')           INLI 214
      LCNT = LCNT + 2                                                    INLI 215
      IF (J .NE. 2 .OR. K .NE. 3) GO TO 255                              INLI 216
      WRITE(6,37) NOBN16                                                 INLI 217
   37 FORMAT(' ','NOBN16= ',I1,',')                                      INLI 218
      LCNT = LCNT + 1                                                    INLI 219
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255 CONTINUE                                                          INLI 220
    IF(LCNT .LT. 56) GO TO 260                                        INLI 221
        LCNT = 0                                                      INLI 222
    WRITE(6,99)                                                       INLI 223
260 CONTINUE                                                          INLI 224
    DO 270 K=1,3                                                      INLI 225
    DO 270 J=1,2                                                      INLI 226
    IF(TAB17(1,J,K) .LE. 0.0) GO TO 270                               INLI 227
    WRITE(6,19) J,K,(TAB17(N,J,K),N=1,2)                              INLI 228
 19 FORMAT('0','TAB17(1,',I1,',',I1,')= ',F2.0,',',F7.2,',')          INLI 229
        LCNT = LCNT + 2                                               INLI 230
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 265                             INLI 231
    WRITE(6,38) NOBN17                                                INLI 232
 38 FORMAT(' ','NOBN17= ',I1,',')                                     INLI 233
    LCNT = LCNT + 1                                                   INLI 234
265 CONTINUE                                                          INLI 235
    IF(LCNT .LT. 56) GO TO 270                                        INLI 236
        LCNT =0                                                       INLI 237
    WRITE(6,99)                                                       INLI 238
270 CONTINUE                                                          INLI 239
    DO 280 K=1,3                                                      INLI 240
    DO 280 J=1,2                                                      INLI 241
    IF(TAB18(1,J,K) .LE. 0.0) GO TO 280                               INLI 242
    WRITE(6,20) J,K,(TAB18(N,J,K),N=1,23)                             INLI 243
 20 FORMAT('0','TAB18(1,',I1,',',I1,')= ',F2.0,',',                   INLI 244
   . 3(T19, 9(F11.2,','))/))                                          INLI 245
        LCNT = LCNT + 4                                               INLI 246
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 275                             INLI 247
    WRITE(6,39) NOBN18                                                INLI 248
 39 FORMAT(' ','NOBN18= ',I1,',')                                     INLI 249
    LCNT = LCNT + 1                                                   INLI 250
275 CONTINUE                                                          INLI 251
    IF(LCNT .LT. 56) GO TO 280                                        INLI 252
        LCNT = 0                                                      INLI 253
    WRITE(6,99)                                                       INLI 254
280 CONTINUE                                                          INLI 255
    DO 290 K=1,3                                                      INLI 256
    DO 290 J=1,2                                                      INLI 257
    IF(TAB19(1,J,K) .LE. 0.0) GO TO 290                               INLI 258
    WRITE(6,21) J,K,(TAB19(N,J,K),N=1,23)                             INLI 259
 21 FORMAT('0','TAB19(1,',I1,',',I1,')= ',F2.0,',',                   INLI 260
   . 3(T19, 9(F11.2,','))/))                                          INLI 261
        LCNT = LCNT + 4                                               INLI 262
    IF (J .NE. 2 .OR. K .NE. 3) GO TO 285                             INLI 263
    WRITE(6,40) NOBN19                                                INLI 264
 40 FORMAT(' ','NOBN19= ',I1,',')                                     INLI 265
    LCNT = LCNT + 1                                                   INLI 266
285 CONTINUE                                                          INLI 267
    IF(LCNT .LT. 56) GO TO 290                                        INLI 268
        LCNT = 0                                                      INLI 269
    WRITE(6,99)                                                       INLI 270
290 CONTINUE                                                          INLI 271
    DO 300 K=1,3                                                      INLI 272
    DO 300 J=1,2                                                      INLI 273
    IF(TAB20(1,J,K) .LE. 0.0) GO TO 300                               INLI 274
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      WRITE(6,22) J,K,(TAB20(N,J,K),N=1,23)                              INLI 275
   22 FORMAT('0','TAB20(1,',I1,',',I1,')= ',F2.0,',',                    INLI 276
     . 3(/1X, 8(F12.3,',')/))                                            INLI 277
          LCNT = LCNT + 4                                                INLI 278
      IF (J .NE. 2 .OR. K .NE. 3) GO TO 295                              INLI 279
      WRITE(6,41) NOBN20                                                 INLI 280
   41 FORMAT(' ','NOBN20= ',I1,',')                                      INLI 281
          LCNT = LCNT + 1                                                INLI 282
  295 CONTINUE                                                           INLI 283
      IF(LCNT .LT. 56) GO TO 300                                         INLI 284
          LCNT = 0                                                       INLI 285
      WRITE(6,99)                                                        INLI 286
  300 CONTINUE                                                           INLI 287
      DO 310 K=1,3                                                       INLI 288
      DO 310 J=1,2                                                       INLI 289
      IF(TAB21(1,J,K) .LE. 0.0) GO TO 310                                INLI 290
      WRITE(6,23) J,K,(TAB21(N,J,K),N=1,2)                               INLI 291
   23 FORMAT('0','TAB21(1,',I1,',',I1,')= ',2(F2.0,','))                 INLI 292
          LCNT= LCNT + 2                                                 INLI 293
      IF(LCNT .LT. 56) GO TO 310                                         INLI 294
          LCNT = 0                                                       INLI 295
      WRITE(6,99)                                                        INLI 296
  310 CONTINUE                                                           INLI 297
      DO 320 K=1,3                                                       INLI 298
      DO 320 J=1,2                                                       INLI 299
      IF(TAB22(1,J,K) .LE. 0.0) GO TO 320                                INLI 300
      WRITE(6,24) J,K,(TAB22(N,J,K),N=1,2)                               INLI 301
   24 FORMAT('0','TAB22(1,',I1,',',I1,')= ',2(F2.0,','))                 INLI 302
          LCNT = LCNT +2                                                 INLI 303
      IF(LCNT .LT. 56) GO TO 320                                         INLI 304
          LCNT =0                                                        INLI 305
      WRITE(6,99)                                                        INLI 306
  320 CONTINUE                                                           INLI 307
      DO 330 K=1,3                                                       INLI 308
      DO 330 J=1,2                                                       INLI 309
      IF(TAB23(1,J,K) .LE. 0.0) GO TO 330                                INLI 310
      WRITE(6,25) J,K,TAB23(1,J,K)                                       INLI 311
   25 FORMAT('0','TAB23(1,',I1,',',I1,')= ',F2.0,',')                    INLI 312
          LCNT = LCNT + 2                                                INLI 313
      IF(LCNT .LT. 56) GO TO 330                                         INLI 314
          LCNT =0                                                        INLI 315
      WRITE(6,99)                                                        INLI 316
  330 CONTINUE                                                           INLI 317
      DO 340 K=1,3                                                       INLI 318
      DO 340 J=1,2                                                       INLI 319
      IF(TAB24(1,J,K) .LE. 0.0) GO TO 340                                INLI 320
      WRITE(6,26) J,K,TAB24(1,J,K)                                       INLI 321
   26 FORMAT('0','TAB24(1,',I1,',',I1,')= ',F2.0,',')                    INLI 322
          LCNT = LCNT + 2                                                INLI 323
      IF(LCNT .LT. 56) GO TO 340                                         INLI 324
          LCNT = 0                                                       INLI 325
      WRITE(6,99)                                                        INLI 326
  340 CONTINUE                                                           INLI 327
      DO 350 K=1,3                                                       INLI 328
      DO 350 J=1,2                                                       INLI 329
```

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      IF(TAB25(1,J,K) .LE. 0.0) GO TO 350                               INLI 330
      WRITE(6,27) J,K,TAB25(1,J,K)                                      INLI 331
   27 FORMAT('0','TAB25(1,',I1,',',I1,')= ',F2.0,',')                   INLI 332
         LCNT = LCNT + 2                                                INLI 333
      IF(LCNT .LT. 56) GO TO 350                                        INLI 334
         LCNT = 0                                                       INLI 335
      WRITE(6,99)                                                       INLI 336
  350 CONTINUE                                                          INLI 337
      DO 360 K=1,3                                                      INLI 338
      DO 360 J=1,2                                                      INLI 339
      IF(TAB26(1,J,K) .LE. 0.0) GO TO 360                               INLI 340
      WRITE(6,28) J,K,(TAB26(N,J,K),N=1,2)                              INLI 341
   28 FORMAT('0','TAB26(1,',I1,',',I1,')= ',2(F2.0,','))                INLI 342
         LCNT = LCNT + 2                                                INLI 343
      IF(LCNT .LT. 56) GO TO 360                                        INLI 344
         LCNT = 0                                                       INLI 345
      WRITE(6,99)                                                       INLI 346
  360 CONTINUE                                                          INLI 347
      RETURN                                                            INLI 348
      END                                                               INLI 349
```

SUBPROGRAM ESTO1

PURPOSE

The subprogram ESTO1 applies the null regulation, i.e., no changes in existing emission levels are required for the source category, pollutant, political jurisdiction specified.

CALLING SEQUENCE

CALL ESTO1

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standard File (TAPE)

PROCEDURE

1. Set output source emission information equal to existing source information and set device information for the regulation to zero.

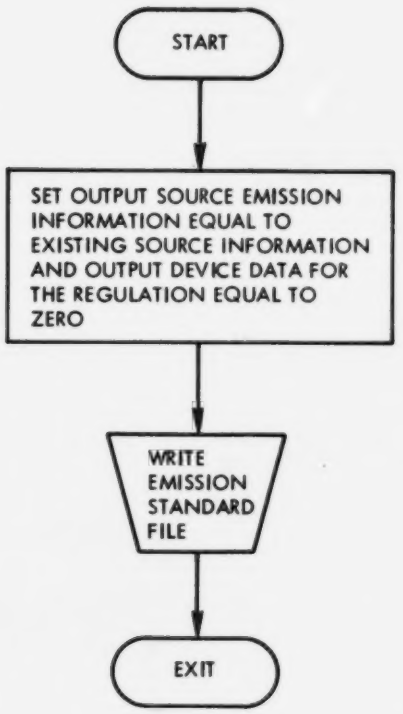
SUBROUTINES

None

INPUT/OUTPUT VARIABLES[1]

SRCDEV Common Block containing source and device information from the Control Cost File.

[1]The variables output from the ESTXX Subprograms to the Emission Standards File are described in this section under the program ESTAND (ESFILE).


START
SET OUTPUT SOURCE EMISSION INFORMATION EQUAL TO EXISTING SOURCE INFORMATION AND OUTPUT DEVICE DATA FOR THE REGULATION EQUAL TO ZERO
WRITE EMISSION STANDARD FILE
EXIT

```
      SUBROUTINE ESTO1                                                          ESO1    1
C                                                                               ESO1    2
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),             ESO1    3
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),       ESO1    4
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),             ESO1    5
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),                  ESO1    6
     .FQTY(4,25),IGAS(25),FQN(4)                                                ESO1    7
      NREG = 1                                                                  ESO1    8
          NCD1 = 0                                                              ESO1    9
      COSTN1 = 0.0                                                              ESO1   10
          IFLAG = 0                                                             ESO1   11
      EFFN(1) = 0.0                                                             ESO1   12
      EFFN(2) = 0.0                                                             ESO1   13
C                                                                               ESO1   14
      NSIC = ISIC(1)                                                            ESO1   15
      NSITE = ISITE(1)                                                          ESO1   16
      EXEMN = EXEM(IPOL,1)                                                      ESO1   17
      REFF = 0.0                                                                ESO1   18
      NGAS = 0                                                                  ESO1   19
      IPJN = IPJ(1)                                                             ESO1   20
          AEMN = EXEMN                                                          ESO1   21
  600 CONTINUE                                                                  ESO1   22
      WRITE (20) NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMN,            ESO1   23
     .       EXEMN,REFF,(FQTY(N,1),N=1,4),NGAS,IPOL,IPJN,ICLASS,NREG,           ESO1   24
     .           IFLAG                                                          ESO1   25
 1000 CONTINUE                                                                  ESO1   26
      RETURN                                                                    ESO1   27
      END                                                                       ESO1   28
```

SUBPROGRAM EST02

PURPOSE

The subprogram EST02 applies a maximum technology regulation, i.e., determines the most efficient pollution control measure possible.

CALLING SEQUENCE

CALL EST02

COMPUTER/LANGUAGE

IBM 360 /FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standard File (TAPE)

PROCEDURE

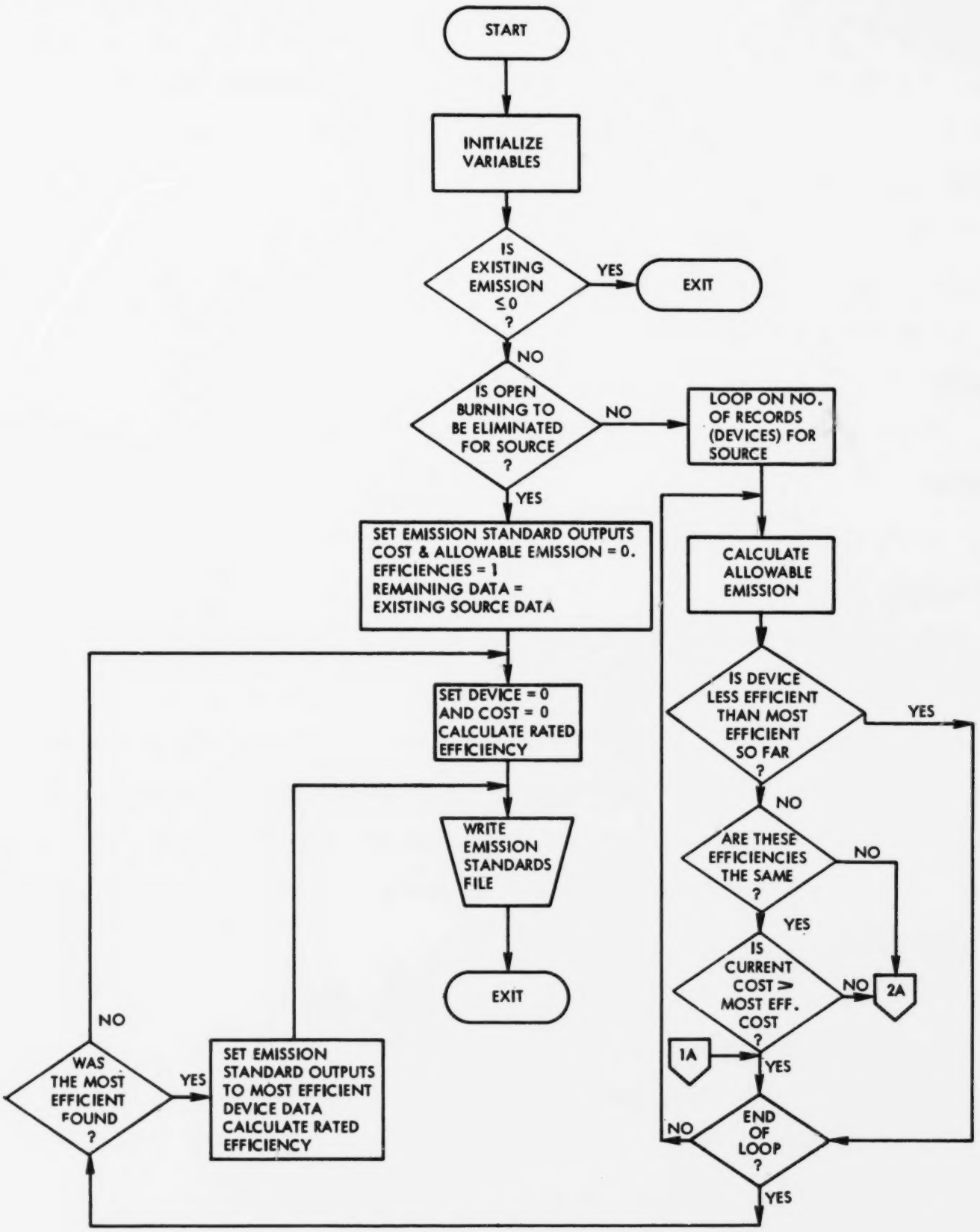
1. If there is no existing emission exit.
2. If open burning is to be eliminated, skip to 4.
3. Calculate the allowable emission for each source record, determine the most efficient device with respect to emission and cost, calculate rated efficiency, write standards file, and exit.
4. Use existing condition for source, write standard file and exit.

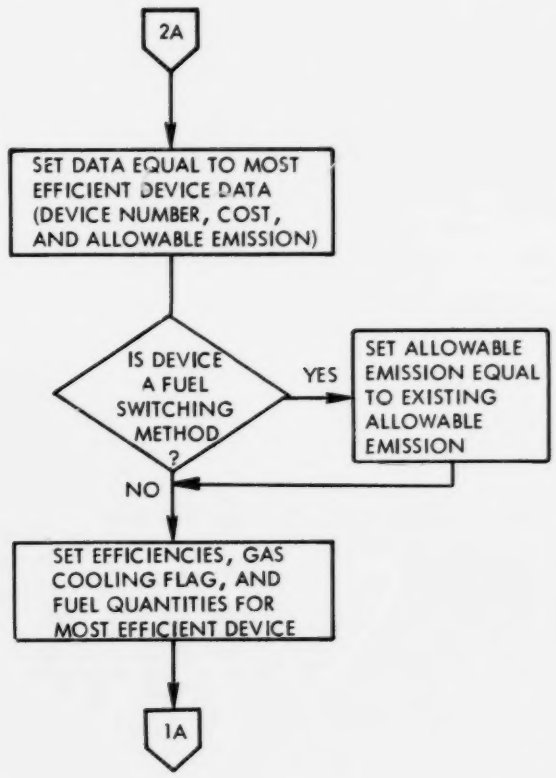
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV - Common block containing source and device information from the Control Cost File


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤0 ?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
NO
LOOP ON NO. OF RECORDS (DEVICES) FOR SOURCE
YES
SET EMISSION STANDARD OUTPUTS COST & ALLOWABLE EMISSION = 0. EFFICIENCIES = 1 REMAINING DATA = EXISTING SOURCE DATA
CALCULATE ALLOWABLE EMISSION
IS DEVICE LESS EFFICIENT THAN MOST EFFICIENT SO FAR ?
YES
NO
ARE THESE EFFICIENCIES THE SAME ?
NO
YES
IS CURRENT COST > MOST EFF. COST ?
NO
2A
1A
YES
END OF LOOP ?
NO
YES
SET DEVICE = 0 AND COST = 0 CALCULATE RATED EFFICIENCY
WRITE EMISSION STANDARDS FILE
EXIT
NO
WAS THE MOST EFFICIENT FOUND ?
YES
SET EMISSION STANDARD OUTPUTS TO MOST EFFICIENT DEVICE DATA CALCULATE RATED EFFICIENCY


2A
SET DATA EQUAL TO MOST EFFICIENT DEVICE DATA (DEVICE NUMBER, COST, AND ALLOWABLE EMISSION)
IS DEVICE A FUEL SWITCHING METHOD ?
YES
SET ALLOWABLE EMISSION EQUAL TO EXISTING ALLOWABLE EMISSION
NO
SET EFFICIENCIES, GAS COOLING FLAG, AND FUEL QUANTITIES FOR MOST EFFICIENT DEVICE
1A

```
      SUBROUTINE EST02                                                      ES02   1
C                                                                           ES02   2
C  MAXIMUM TECHNOLOGY,       . PICK MOST EFFICIENT DEVICE                   ES02   3
C                                                                           ES02   4
      COMMON/BURN/        NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,        ES02   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES02   6
     .             NOBN19,NOBN20                                            ES02   7
      COMMON /DVICE/           IERR,IREGON                                  ES02   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES02   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES02  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES02  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES02  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                               ES02  13
           NREG = 2                                                         ES02  14
           NCD1 = 0                                                         ES02  15
           NSIC = 0                                                         ES02  16
           NSITE = 0                                                        ES02  17
           COSTN1 = 1.0E+9                                                  ES02  18
           EFFN(1) = 0.0                                                    ES02  19
           EFFN(2) = 0.0                                                    ES02  20
           NGAS = 0                                                         ES02  21
           IFLAG = 0                                                        ES02  22
      IF (EXEM(IPOL,1)  .LE. 0.0) GO TO 598                                 ES02  23
      DO 10 I=1,4                                                           ES02  24
   10      FQN(I) = FQTY(I,1)                                               ES02  25
C  NO OPEN BURNING SECTION                                                  ES02  26
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                          ES02  27
      IF(NOBN02 .NE. 1) GO TO 510                                           ES02  28
      IF (ISIC(1) .NE. 4953) GO TO 510                                      ES02  29
      IP = MOD(ISITE(1),10)                                                 ES02  30
      IF (IP .NE. 2) GO TO 510                                              ES02  31
      NSIC = ISIC(1)                                                        ES02  32
      NSITE = ISITE(1)                                                      ES02  33
      COSTN1 = 0.0                                                          ES02  34
      AEMN = 0.0                                                            ES02  35
      EXEMN = EXEM(IPOL,1)                                                  ES02  36
      EFFN(1) = 1.0                                                         ES02  37
      EFFN(2) = 1.0                                                         ES02  38
      IPJN = IPJ(1)                                                         ES02  39
      GO TO 595                                                             ES02  40
  510 CONTINUE                                                              ES02  41
      DO 590 LL=1,ISRC                                                      ES02  42
  520     CEM = EXEM(IPOL,LL)* (1.0 - EFF(IPOL,LL))                        ES02  43
      IF (EFF(IPOL,LL) .LT. EFFN(IPOL)) GO TO 590                           ES02  44
      IF (EFF(IPOL,LL) .NE. EFFN(IPOL)) GO TO 525                           ES02  45
      IF (COSTI(LL) .GT. COSTN1) GO TO 590                                  ES02  46
  525 CONTINUE                                                              ES02  47
           NSIC = ISIC(LL)                                                  ES02  48
           NSITE = ISITE(LL)                                                ES02  49
           NCD1 = ICID(LL)                                                  ES02  50
           COSTN1 = COSTI(LL)                                               ES02  51
           AEMN = CEM                                                       ES02  52
      IF(IPOL .NE. 1) GO TO 535                                             ES02  53
      IF(ICID(LL) .GE. 30 .AND. ICID(LL) .LE. 32) AEMN=AEM(LL)              ES02  54
```

```
535      EFFN(1) = EFF(1,LL)                                                ES02  55
         EFFN(2) = EFF(2,LL)                                                ES02  56
         EXEMN = EXEM(IPOL,LL)                                              ES02  57
         NGAS = IGAS(LL)                                                    ES02  58
      DO 530 I=1,4                                                          ES02  59
530      FQN(I) = FQTY(I,LL)                                                ES02  60
         IPJN = IPJ(LL)                                                     ES02  61
590   CONTINUE                                                              ES02  62
      IF (NSIC .NE. 0) GO TO 595                                            ES02  63
      NSIC = ISIC(1)                                                        ES02  64
      NSITE = ISITE(1)                                                      ES02  65
         COSTN1= 0.0                                                        ES02  66
         AEMN = 0.0                                                         ES02  67
         EXEMN = EXEM(IPOL,1)                                               ES02  68
         IPJN  = IPJ(1)                                                     ES02  69
595   CONTINUE                                                              ES02  70
      IF (EFFN(IPOL) .NE. 0.0) GO TO 610                                    ES02  71
      NCD1 = 0                                                              ES02  72
      COSTN1 = 0.0                                                          ES02  73
610   CONTINUE                                                              ES02  74
         REFF = (PEMN - AEMN) / PEMN                                        ES02  75
      WRITE (20) NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMN,        ES02  76
     .           EXEMN,REFF,(FQN(N),N=1,4),NGAS,IPOL,IPJN,ICLASS,NREG,      ES02  77
     .           IFLAG                                                      ES02  78
598   CONTINUE                                                              ES02  79
      RETURN                                                                ES02  80
      END                                                                   ES02  81
```

SUBPROGRAM EST03

PURPOSE

The subprogram EST03 determines the most efficient pollution control measure allowing up to ten control measures which are to be excluded from consideration.

CALLING SEQUENCE

CALL EST03

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

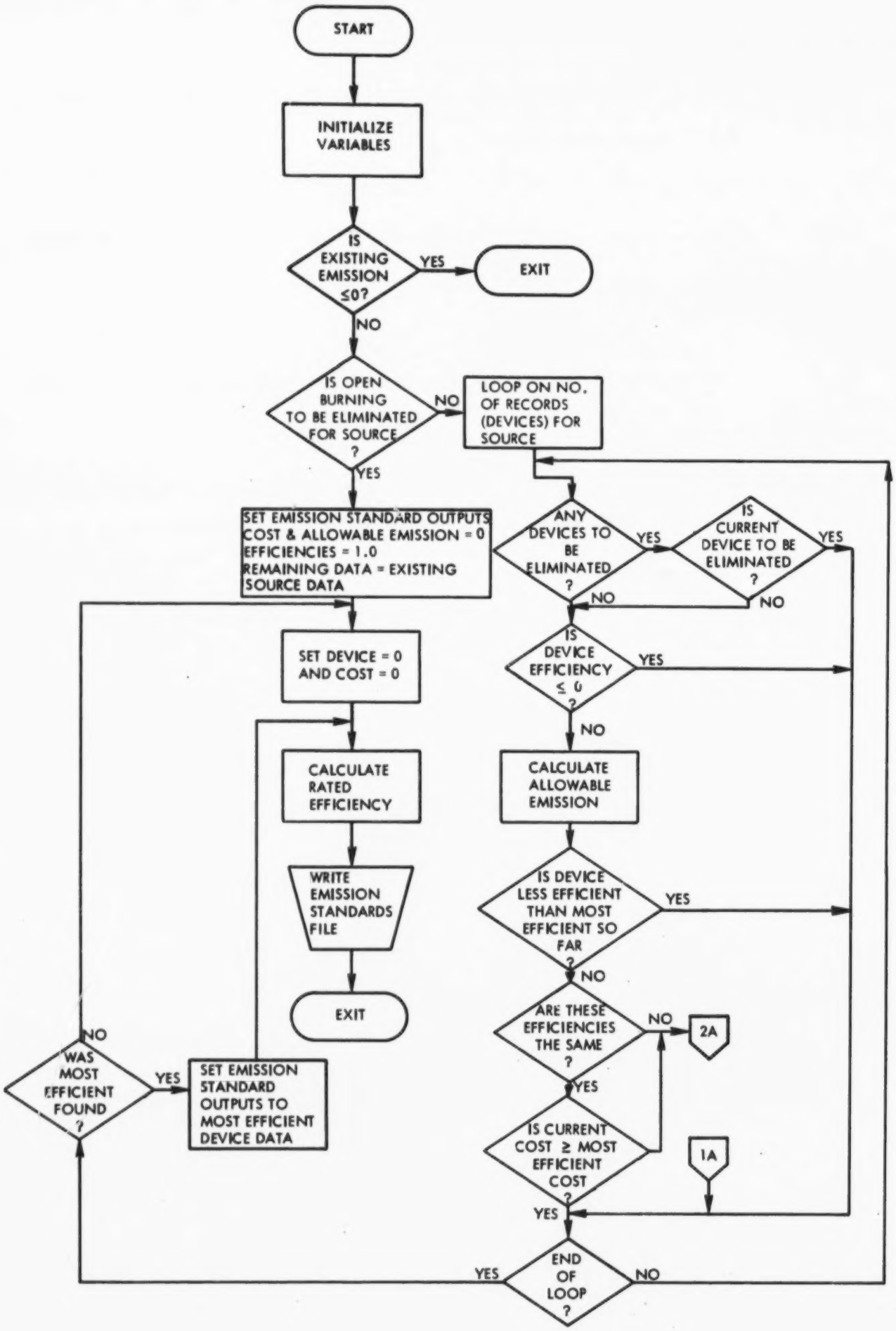
1. If open burning is to be eliminated, use existing data and output to Emission Standards File and exit.
2. If open burning is not to be eliminated, check devices that are to be eliminated.
3. If device is to be eliminated, get next device, else calculate allowable emission.
4. Determine the most efficient device with respect to emission and cost, calculate the rated efficiency, write to the Emission Standards File and exit.

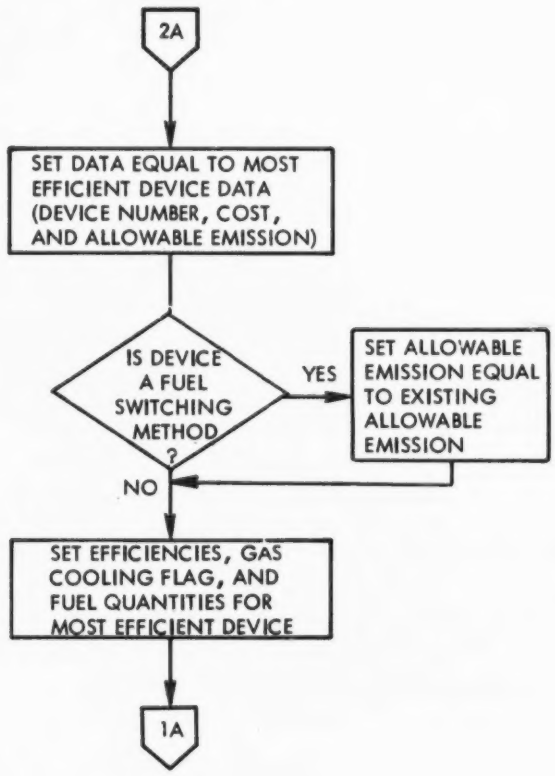
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
BURN	Common block containing flag for elimination of open burning.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤0?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
NO
LOOP ON NO. OF RECORDS (DEVICES) FOR SOURCE
YES
SET EMISSION STANDARD OUTPUTS
COST & ALLOWABLE EMISSION = 0
EFFICIENCIES = 1.0
REMAINING DATA = EXISTING SOURCE DATA
ANY DEVICES TO BE ELIMINATED ?
YES
IS CURRENT DEVICE TO BE ELIMINATED ?
YES
NO
NO
SET DEVICE = 0 AND COST = 0
IS DEVICE EFFICIENCY ≤ 0 ?
YES
NO
CALCULATE RATED EFFICIENCY
CALCULATE ALLOWABLE EMISSION
WRITE EMISSION STANDARDS FILE
IS DEVICE LESS EFFICIENT THAN MOST EFFICIENT SO FAR ?
YES
NO
EXIT
ARE THESE EFFICIENCIES THE SAME ?
NO
2A
YES
IS CURRENT COST ≥ MOST EFFICIENT COST ?
1A
YES
NO
WAS MOST EFFICIENT FOUND ?
YES
SET EMISSION STANDARD OUTPUTS TO MOST EFFICIENT DEVICE DATA
YES
END OF LOOP ?
NO


2A
SET DATA EQUAL TO MOST EFFICIENT DEVICE DATA (DEVICE NUMBER, COST, AND ALLOWABLE EMISSION)
IS DEVICE A FUEL SWITCHING METHOD ?
YES
SET ALLOWABLE EMISSION EQUAL TO EXISTING ALLOWABLE EMISSION
NO
SET EFFICIENCIES, GAS COOLING FLAG, AND FUEL QUANTITIES FOR MOST EFFICIENT DEVICE
1A

```
      SUBROUTINE EST03                                                      ES03   1
C  MAXIMUM TECHNOLOGY,                                                     ES03   2
C   PICK MOST EFFICIENT DEVICE OTHER THAN DEVICES SPECIFIED                ES03   3
C                                                                         ES03   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,       ES03   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                     ES03   6
     .            NOBN19,NOBN20                                           ES03   7
      COMMON /DVICE/          IERR,IREGON                                 ES03   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),       ES03   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25), ES03  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES03  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES03  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                             ES03  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES03  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),          ES03  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),          ES03  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),          ES03  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),          ES03  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),          ES03  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                         ES03  20
          NREG = 3                                                        ES03  21
          NCD1 = 0                                                        ES03  22
          NSIC = 0                                                        ES03  23
          NSITE = 0                                                       ES03  24
          COSTN1 = 1.0E+9                                                 ES03  25
          EFFN(1) = 0.0                                                   ES03  26
          EFFN(2) = 0.0                                                   ES03  27
          NGAS = 0                                                        ES03  28
          IFLAG = 0                                                       ES03  29
      IF (EXEM(IPOL,1)  .LE. 0.0) GO TO 598                               ES03  30
      DO 10 I=1,4                                                         ES03  31
   10     FQN(I) = FQTY(I,1)                                             ES03  32
C  NO OPEN BURNING SECTION                                                ES03  33
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                        ES03  34
      IF(NOBN03 .NE. 1) GO TO 510                                         ES03  35
      IF (ISIC(1) .NE. 4953) GO TO 510                                    ES03  36
      IP = MOD(ISITE(1),10)                                               ES03  37
      IF (IP .NE. 2) GO TO 510                                            ES03  38
      NSIC = ISIC(1)                                                      ES03  39
      NSITE = ISITE(1)                                                    ES03  40
      COSTN1 = 0.0                                                        ES03  41
      AEMN = 0.0                                                          ES03  42
      EXEMN = EXEM(IPOL,1)                                                ES03  43
      EFFN(1) = 1.0                                                       ES03  44
      EFFN(2) = 1.0                                                       ES03  45
      IPJN = IPJ(1)                                                       ES03  46
      GO TO 595                                                           ES03  47
  510 CONTINUE                                                            ES03  48
      DO 590 LL=1,ISRC                                                    ES03  49
C   ELIMINATE SPECIFIED DEVICES                                           ES03  50
      IF(TAB03(2,IPOL,ICLASS) .EQ. 0.0) GO TO 520                         ES03  51
      DO 515 M=2,11                                                       ES03  52
      IF(TAB03(M,IPOL,ICLASS) .EQ. 0.0) GO TO 520                         ES03  53
      IF(ICID(LL) .EQ. TAB03(M,IPOL,ICLASS)) GO TO 590                    ES03  54
```

```
515 CONTINUE                                                          ES03  55
520 CONTINUE                                                          ES03  56
        CEM = EXEM(IPOL,LL)* (1.0 - EFF(IPOL,LL))                     ES03  57
    IF (EFF(IPOL,LL) .LT. EFFN(IPOL)) GO TO 590                       ES03  58
    IF (EFF(IPOL,LL) .NE. EFFN(IPOL)) GO TO 525                       ES03  59
    IF (COSTI(LL) .GT. COSTN1) GO TO 590                              ES03  60
525 CONTINUE                                                          ES03  61
        NSIC = ISIC(LL)                                               ES03  62
        NSITE = ISITE(LL)                                             ES03  63
        NCD1 = ICID(LL)                                               ES03  64
        COSTN1 = COSTI(LL)                                            ES03  65
        AEMN = CEM                                                    ES03  66
    IF(IPOL .NE. 1) GO TO 535                                         ES03  67
    IF(ICID(LL) .GE. 30 .AND. ICID(LL) .LE. 32) AEMN=AEM(LL)          ES03  68
535     EFFN(1) = EFF(1,LL)                                           ES03  69
        EFFN(2) = EFF(2,LL)                                           ES03  70
        EXEMN = EXEM(IPOL,LL)                                         ES03  71
        NGAS = IGAS(LL)                                               ES03  72
    DO 530 I=1,4                                                      ES03  73
530     FQN(I) = FQTY(I,LL)                                           ES03  74
        IPJN = IPJ(LL)                                                ES03  75
590 CONTINUE                                                          ES03  76
    IF (NSIC .NE. 0) GO TO 595                                        ES03  77
    NSIC = ISIC(1)                                                    ES03  78
    NSITE = ISITE(1)                                                  ES03  79
        COSTN1= 0.0                                                   ES03  80
        AEMN = 0.0                                                    ES03  81
        EXEMN = EXEM(IPOL,1)                                          ES03  82
        IPJN  = IPJ(1)                                                ES03  83
595 CONTINUE                                                          ES03  84
    IF (EFFN(IPOL) .NE. 0.0) GO TO 610                                ES03  85
    NCD1 = 0                                                          ES03  86
    COSTN1 = 0.0                                                      ES03  87
610 CONTINUE                                                          ES03  88
        REFF = (PEMN - AEMN) / PEMN                                   ES03  89
    WRITE (20) NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMN,    ES03  90
   .           EXEMN,REFF,(FQN(N),N=1,4),NGAS,IPOL,IPJN,ICLASS,NREG,  ES03  91
   .           IFLAG                                                  ES03  92
598 CONTINUE                                                          ES03  93
    RETURN                                                            ES03  94
    END                                                               ES03  95
```

SUBPROGRAM EST04

PURPOSE

The subprogram EST04 determines the most efficient pollution control measure allowing up to ten control measures which are to be excluded from consideration.

CALLING SEQUENCE

CALL EST04

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File(TAPE)

PROCEDURE

1. If open burning is to be eliminated, use existing data and output to the Emission Standards File and exit.
2. If open burning is not to be eliminated, check devices that are to be eliminated.
3. If device is to be eliminated, get next device, else calculate allowable emission.
4. Determine the most efficient device with respect to emission and cost, calculate the rated efficiency, write to the Emission Standards File and exit.

SUBROUTINES

None

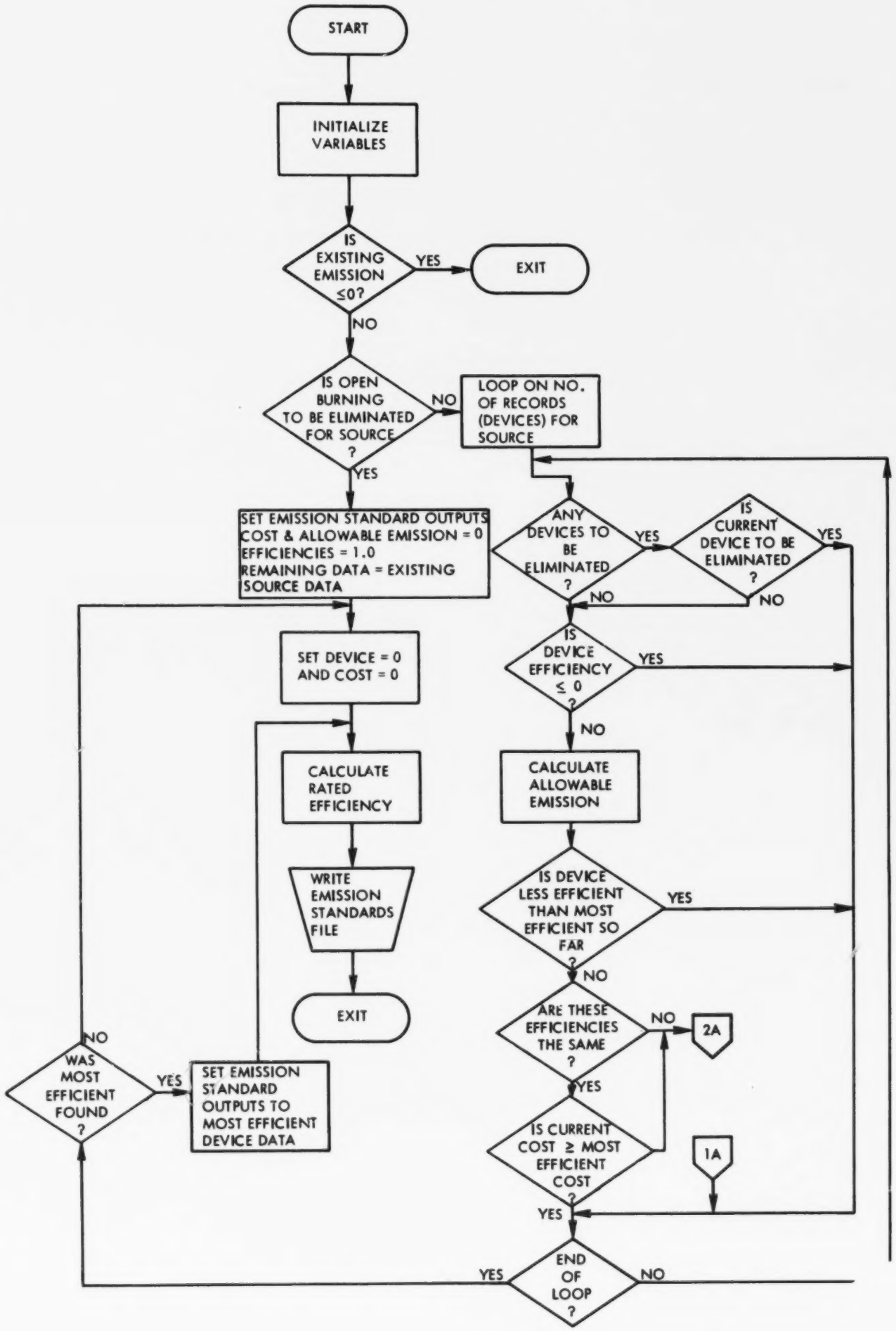
INPUT/OUTPUT VARIABLES

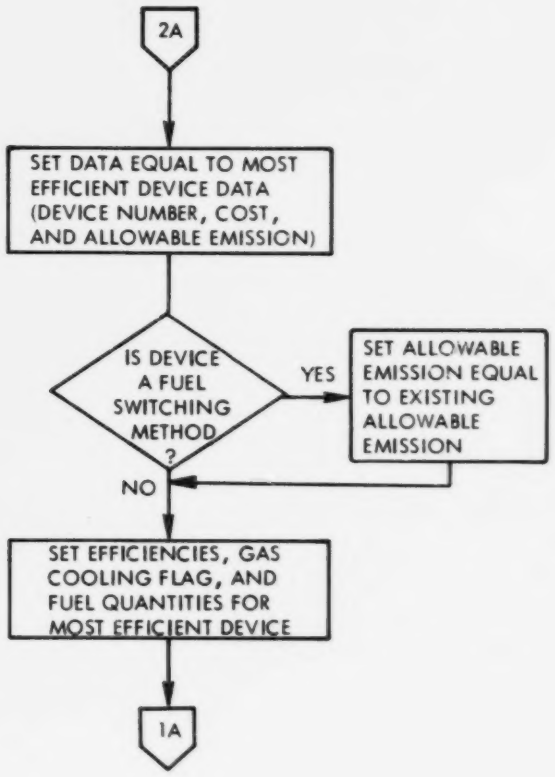
SRCDEV Common block containing source and device information from the Control Cost File.

BURN Common block containing flags for elimination of open burning.

DVICE Common block containing flags for internal program functions.

TABS Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤0?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
NO
LOOP ON NO. OF RECORDS (DEVICES) FOR SOURCE
YES
SET EMISSION STANDARD OUTPUTS COST & ALLOWABLE EMISSION = 0
EFFICIENCIES = 1.0
REMAINING DATA = EXISTING SOURCE DATA
ANY DEVICES TO BE ELIMINATED ?
YES
IS CURRENT DEVICE TO BE ELIMINATED ?
YES
NO
NO
SET DEVICE = 0 AND COST = 0
IS DEVICE EFFICIENCY ≤ 0 ?
YES
NO
CALCULATE RATED EFFICIENCY
CALCULATE ALLOWABLE EMISSION
WRITE EMISSION STANDARDS FILE
IS DEVICE LESS EFFICIENT THAN MOST EFFICIENT SO FAR ?
YES
NO
EXIT
ARE THESE EFFICIENCIES THE SAME ?
NO
2A
YES
IS CURRENT COST ≥ MOST EFFICIENT COST ?
1A
NO
YES
WAS MOST EFFICIENT FOUND ?
YES
SET EMISSION STANDARD OUTPUTS TO MOST EFFICIENT DEVICE DATA
NO
END OF LOOP ?
YES
NO


2A
SET DATA EQUAL TO MOST EFFICIENT DEVICE DATA (DEVICE NUMBER, COST, AND ALLOWABLE EMISSION)
IS DEVICE A FUEL SWITCHING METHOD ?
YES
SET ALLOWABLE EMISSION EQUAL TO EXISTING ALLOWABLE EMISSION
NO
SET EFFICIENCIES, GAS COOLING FLAG, AND FUEL QUANTITIES FOR MOST EFFICIENT DEVICE
1A

```
      SUBROUTINE EST04                                                      ES04   1
C  MAXIMUM TECHNOLOGY,                                                     ES04   2
C   PICK THE MOST EFFICIENT DEVICE OTHER THAN DEVICES SPEICFIED           ES04   3
C                                                                         ES04   4
      COMMON/BURN/        NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,      ES04   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                    ES04   6
     .             NOBN19,NOBN20                                          ES04   7
      COMMON /DVICE/          IERR,IREGON                                 ES04   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),       ES04   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25), ES04  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES04  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES04  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                             ES04  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES04  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),          ES04  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),          ES04  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),          ES04  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),          ES04  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),          ES04  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                         ES04  20
         NREG = 4                                                         ES04  21
         NCD1 = 0                                                         ES04  22
         NSIC = 0                                                         ES04  23
         NSITE = 0                                                        ES04  24
         COSTN1 = 1.0E+9                                                  ES04  25
         EFFN(1) = 0.0                                                    ES04  26
         EFFN(2) = 0.0                                                    ES04  27
         NGAS = 0                                                         ES04  28
         IFLAG = 0                                                        ES04  29
      IF (EXEM(IPOL,1)  .LE. 0.0) GO TO 598                               ES04  30
      DO 10 I=1,4                                                         ES04  31
   10    FQN(I) = FQTY(I,1)                                               ES04  32
C  NO OPEN BURNING SECTION                                                ES04  33
      IF(NOBN04 .NE. 1) GO TO 510                                         ES04  34
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                        ES04  35
      IF (ISIC(1) .NE. 4953) GO TO 510                                    ES04  36
      IP = MOD(ISITE(1),10)                                               ES04  37
      IF (IP .NE. 2) GO TO 510                                            ES04  38
      NSIC = ISIC(1)                                                      ES04  39
      NSITE = ISITE(1)                                                    ES04  40
      COSTN1 = 0.0                                                        ES04  41
      AEMN = 0.0                                                          ES04  42
      EXEMN = EXEM(IPOL,1)                                                ES04  43
      EFFN(1) = 1.0                                                       ES04  44
      EFFN(2) = 1.0                                                       ES04  45
      IPJN = IPJ(1)                                                       ES04  46
      GO TO 595                                                           ES04  47
  510 CONTINUE                                                            ES04  48
      DO 590 LL=1,ISRC                                                    ES04  49
C   ELIMINATE SPECIFIED DEVICES                                           ES04  50
      IF(TAB04(2,IPOL,ICLASS) .EQ. 0.0) GO TO 520                         ES04  51
      DO 515 M=2,11                                                       ES04  52
      IF(TAB04(M,IPOL,ICLASS) .EQ. 0.0) GO TO 520                         ES04  53
      IF(ICID(LL) .EQ. TAB04(M,IPOL,ICLASS)) GO TO 590                    ES04  54
```

```
515 CONTINUE                                                          ES04  55
520     CEM = EXEM(IPOL,LL) * (1.0 - EFF(IPOL,LL))                   ES04  56
    IF (EFF(IPOL,LL) .LT. EFFN(IPOL)) GO TO 590                       ES04  57
    IF (EFF(IPOL,LL) .NE. EFFN(IPOL)) GO TO 525                       ES04  58
    IF (COSTI(LL) .GT. COSTN1) GO TO 590                              ES04  59
525 CONTINUE                                                          ES04  60
        NSIC = ISIC(LL)                                               ES04  61
        NSITE = ISITE(LL)                                             ES04  62
        NCD1 = ICID(LL)                                               ES04  63
        COSTN1 = COSTI(LL)                                            ES04  64
        AEMN = CEM                                                    ES04  65
    IF(IPOL .NE. 1) GO TO 535                                         ES04  66
    IF(ICID(LL) .GE. 30 .AND. ICID(LL) .LE. 32) AEMN=AEM(LL)          ES04  67
535     EFFN(1) = EFF(1,LL)                                           ES04  68
        EFFN(2) = EFF(2,LL)                                           ES04  69
        EXEMN = EXEM(IPOL,LL)                                         ES04  70
        NGAS = IGAS(LL)                                               ES04  71
    DO 530 I=1,4                                                      ES04  72
530     FQN(I) = FQTY(I,LL)                                           ES04  73
        IPJN = IPJ(LL)                                                ES04  74
590 CONTINUE                                                          ES04  75
    IF (NSIC .NE. 0) GO TO 595                                        ES04  76
    NSIC = ISIC(1)                                                    ES04  77
    NSITE = ISITE(1)                                                  ES04  78
        COSTN1= 0.0                                                   ES04  79
        AEMN = 0.0                                                    ES04  80
        EXEMN = EXEM(IPOL,1)                                          ES04  81
        IPJN  = IPJ(1)                                                ES04  82
595 CONTINUE                                                          ES04  83
    IF (EFFN(IPOL) .NE. 0.0) GO TO 610                                ES04  84
    NCD1 = 0                                                          ES04  85
    COSTN1 = 0.0                                                      ES04  86
610 CONTINUE                                                          ES04  87
        REFF = (PEMN - AEMN) / PEMN                                   ES04  88
    WRITE (20) NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMN,    ES04  89
   .           EXEMN,REFF,(FQN(N),N=1,4),NGAS,IPOL,IPJN,ICLASS,NREG,  ES04  90
   .           IFLAG                                                  ES04  91
598 CONTINUE                                                          ES04  92
    RETURN                                                            ES04  93
    END                                                               ES04  94
```

SUBPROGRAM ESTO5

PURPOSE

The subprogram ESTO5 calculates the allowable emissions for a source based on potential emissions which are calculated from existing source information.

CALLING SEQUENCE

CALL ESTO5

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If open burning is to be eliminated, set burn flag and exit.
2. Compute potential emission
3. If potential emission is in graph range, calculate allowable emission and exit.
4. If potential emission is greater than graph range, determine if a suitable range exists; if not, write error and exit.
5. If potential emission is less than graph range, write error and exit.

SUBROUTINES

None

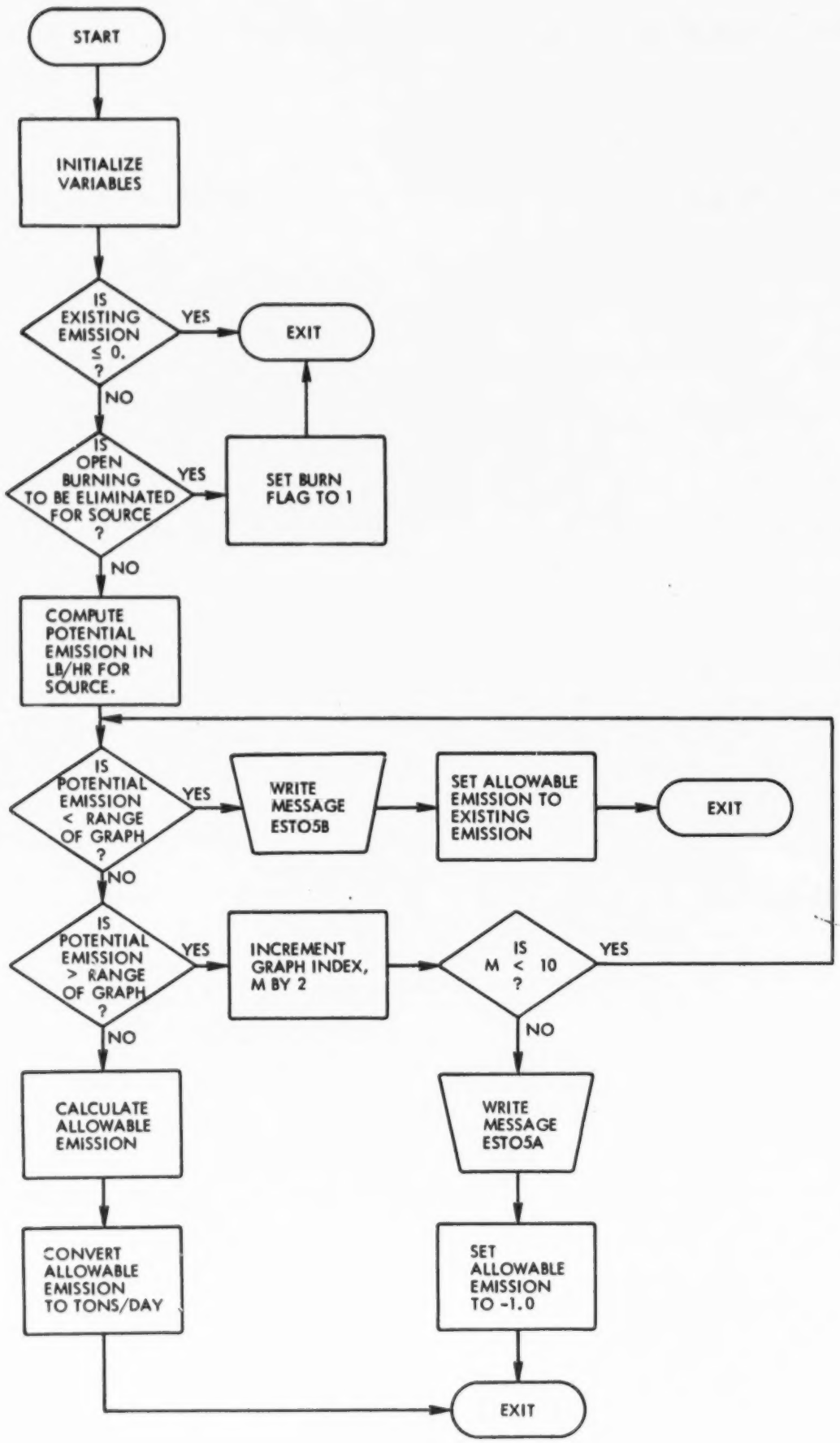
INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

BURN Common block containing flags for elimination of open burning.

DVICE Common block containing flags for internal program functions.

TABS Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0. ?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
NO
COMPUTE POTENTIAL EMISSION IN LB/HR FOR SOURCE.
IS POTENTIAL EMISSION < RANGE OF GRAPH ?
YES
WRITE MESSAGE ESTO5B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS POTENTIAL EMISSION > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX, M BY 2
IS M < 10 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE ESTO5A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST05                                                      ES05   1
C                                                                           ES05   2
C   POTENTIAL EMISSION CURVE STANDARD                                       ES05   3
C                                                                           ES05   4
      COMMON/BURN/       NOBNO2,NOBNO3,NOBNO4,NOBNO5,NOBNO6,NOBNO7,       ES05   5
     .           NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                       ES05   6
     .           NOBN19,NOBN20                                             ES05   7
      COMMON /DVICE/          IERR,IREGON,IBURN                           ES05   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),       ES05   9
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES05  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES05  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES05  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN,EXEFF(2,25)                 ES05  13
      COMMON/TABS/TAB01(1,2,3),TABC2(1,2,3),TABC3(11,2,3),TAB04(11,2,3),ES05  14
     . TABC5(11,2,3),TAB06(11,2,3),TABC7(11,2,3),TAB08( 9,2,3),           ES05  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),           ES05  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),           ES05  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),           ES05  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),           ES05  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                          ES05  20
C                                                                           ES05  21
          NREG = 0                                                          ES05  22
      IL = IPOL                                                             ES05  23
      IS = ICLASS                                                           ES05  24
      I = 1                                                                 ES05  25
C                                                                           ES05  26
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                                  ES05  27
          NREG = 5                                                          ES05  28
C  NO OPEN BURNING SECTION                                                  ES05  29
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                          ES05  30
      IF(NOBNO5 .NE. 1) GO TO 510                                           ES05  31
      IF (ISIC(1) .NE. 4953) GO TO 510                                      ES05  32
      IP = MOD(ISITE(1),10)                                                 ES05  33
      IF (IP .NE. 2) GO TO 510                                              ES05  34
          IBURN = 1                                                         ES05  35
      GO TO 500                                                             ES05  36
  510 CONTINUE                                                              ES05  37
C COMPUTE POT.  EMISSION (LBS/HR) FOR SOURCE I.                             ES05  38
C                                                                           ES05  39
      PPER = 250. * PEMN / SHIFT(I)                                         ES05  40
      M = 2                                                                 ES05  41
  200 CONTINUE                                                              ES05  42
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES05  43
C                                                                           ES05  44
      IF(PPER .LT. TAB05(M,IL,IS)) GO TO 400                                ES05  45
C                                                                           ES05  46
      IF(PPER .GT. TAB05(M+2,IL,IS)) GO TO 300                              ES05  47
C                                                                           ES05  48
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/HOUR)     FROM GRAPH (Y=MX+B)    ES05  49
C                                                                           ES05  50
          YLOG = (ALOG10(TAB05(M+3,IL,IS))- ALOG10(TAB05(M+1,IL,IS))) /     ES05  51
     .           (ALOG10(TAB05(M+2,IL,IS))- ALOG10(TAB05(M,IL,IS))) *      ES05  52
     .           (ALOG10(PPER)- ALOG10(TAB05(M,IL,IS)))                    ES05  53
     .         + ALOG10(TAB05(M+1,IL,IS))                                  ES05  54
```

```
      Y = 10. **YLOG                                                    ES05  55
C                                                                       ES05  56
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES05  57
C                                                                       ES05  58
      '     AEM(I) = .004 * Y * SHIFT(I)                                ES05  59
        AEM(I) = EXEM(IL,I) * (1.-(((PEMN - AEM(I))/ PEMN -             ES05  60
     .            EXEFF(IL,I)) / (1.- EXEFF(IL,I))))                   ES05  61
  250 CONTINUE                                                          ES05  62
      GO TO 500                                                         ES05  63
  300 CONTINUE                                                          ES05  64
      M = M + 2                                                         ES05  65
      IF (M .LT. 10) GO TO 200                                          ES05  66
      WRITE (8,91) ISIC(I),ISITE(I),PPER                                ES05  67
   91 FORMAT('0**EST05A- SOURCE ',I4,I5,' PE VALUE OF ',F8.0,' EXCEEDS TESO5  68
     .ABLE LIMIT, STANDARD CANNOT BE APPLIED.')                         ES05  69
        AEM(I) = -1.0                                                   ES05  70
      GO TO 500                                                         ES05  71
  400 CONTINUE                                                          ES05  72
      WRITE (8,90) ISIC(I),ISITE(I),PPER                                ES05  73
   90 FORMAT('0**EST05B- SOURCE ',I4,I5,' PE VALUE OF ',F8.2,' LESS THANESO5  74
     . MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.') ES05  75
        AEM(I) = EXEM(IPOL,I)                                           ES05  76
        IERR = 1                                                        ES05  77
  500 CONTINUE                                                          ES05  78
      RETURN                                                            ES05  79
      END                                                               ES05  80
```

SUBPROGRAM EST 06

PURPOSE

The subprogram EST06 calculates the allowable emissions for a source based on potential emissions which are calculated from existing source information.

CALLING SEQUENCE

CALL EST06

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If open burning is to be eliminated, set burn flag and exit
2. Compute potential emission
3. If potential emission is greater than graph range, determine if a suitable range exists; if not, write error and exit.
5. If potential emission is less than graph range, write errir, and exit.

SUBROUTINES

None

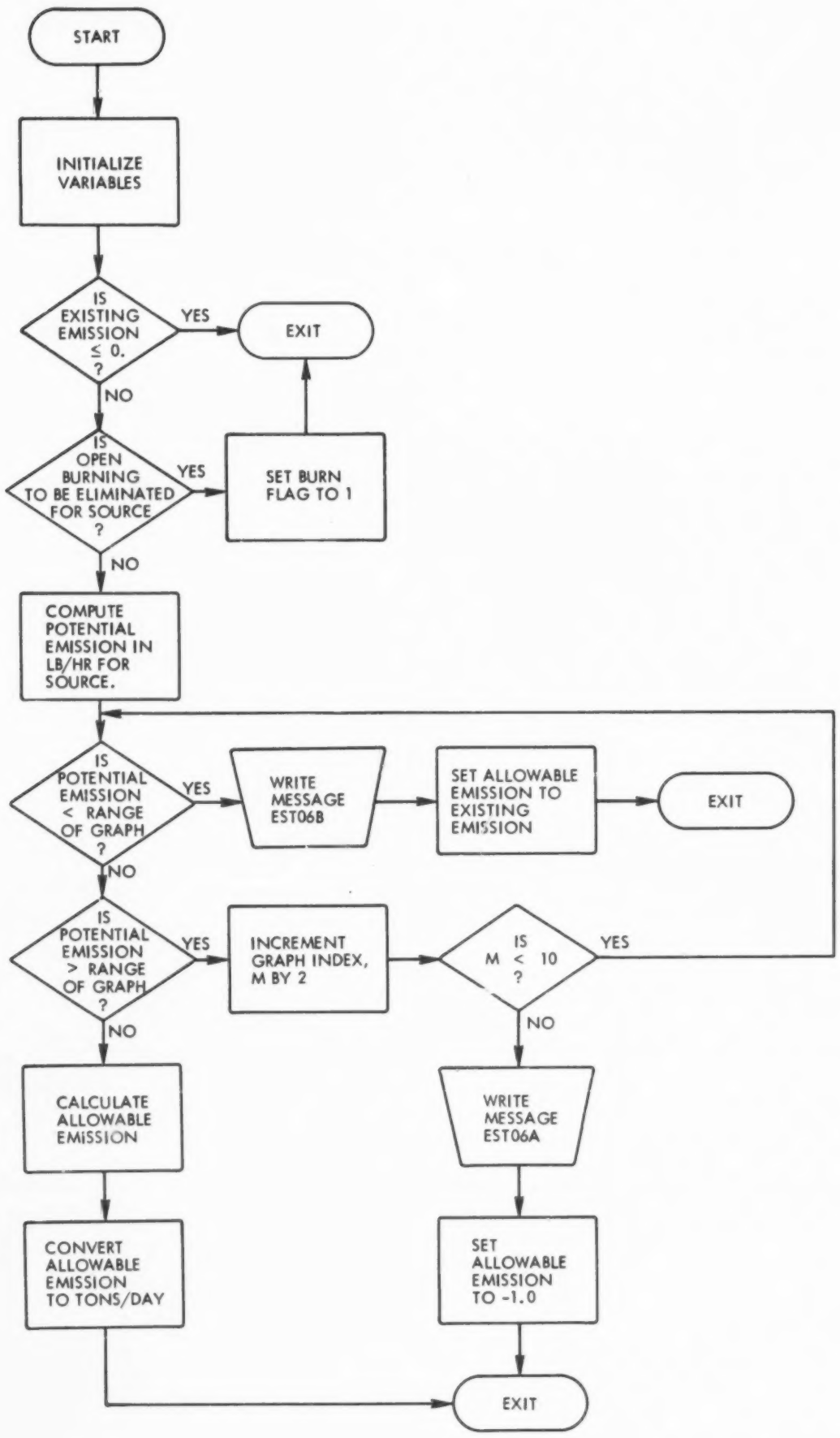
INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

BURN Common block containing flag for elimination of open burning.

DVICE Common block containing flags for internal program functions.

TABS Common block contianing emission standard inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0. ?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
NO
COMPUTE POTENTIAL EMISSION IN LB/HR FOR SOURCE.
IS POTENTIAL EMISSION < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST06B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS POTENTIAL EMISSION > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX, M BY 2
IS M < 10 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE EST06A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST06                                                      ES06   1
C                                                                           ES06   2
C     POTENTIAL EMISSION   STANDARD 6                                       ES06   3
C                                                                           ES06   4
      COMMON/BURN/        NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,        ES06   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES06   6
     .             NOBN19,NOBN20                                            ES06   7
      COMMON /DVICE/            IERR,IREGON,IBURN                         ES06   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES06   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES06  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES06  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES06  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN,EXEFF(2,25)                   ES06  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES06  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES06  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES06  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES06  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES06  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES06  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES06  20
C                                                                           ES06  21
          NREG = 0                                                          ES06  22
      IL = IPOL                                                             ES06  23
      IS = ICLASS                                                           ES06  24
      I = 1                                                                 ES06  25
C                                                                           ES06  26
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                                  ES06  27
          NREG = 6                                                          ES06  28
C  NO OPEN BURNING SECTION                                                  ES06  29
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                          ES06  30
      IF(NOBN06 .NE. 1) GO TO 510                                           ES06  31
      IF (ISIC(1) .NE. 4953) GO TO 510                                      ES06  32
      IP = MOD(ISITE(1),10)                                                 ES06  33
      IF (IP .NE. 2) GO TO 510                                              ES06  34
          IBURN = 1                                                         ES06  35
      GO TO 500                                                             ES06  36
  510 CONTINUE                                                              ES06  37
C COMPUTE POT.  EMISSION (LBS/HR) FOR SOURCE I.                             ES06  38
C                                                                           ES06  39
      PPER = 250. * PEMN / SHIFT(I)                                         ES06  40
      M = 2                                                                 ES06  41
  200 CONTINUE                                                              ES06  42
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES06  43
C                                                                           ES06  44
      IF(PPER .LT. TAB06(M,IL,IS)) GO TO 400                                ES06  45
C                                                                           ES06  46
      IF(PPER .GT. TAB06(M+2,IL,IS)) GO TO 300                              ES06  47
C                                                                           ES06  48
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/HOUR)     FROM GRAPH (Y=MX+B)    ES06  49
C                                                                           ES06  50
          YLOG = (ALOG10(TAB06(M+3,IL,IS))- ALOG10(TAB06(M+1,IL,IS))) /     ES06  51
     .           (ALOG10(TAB06(M+2,IL,IS))- ALOG10(TAB06(M,IL,IS))) *      ES06  52
     .           (ALOG10(PPER)- ALOG10(TAB06(M,IL,IS)))                    ES06  53
     .         + ALOG10(TAB06(M+1,IL,IS))                                  ES06  54
```

```
          Y = 10. **YLOG                                                    ES06  55
C                                                                           ES06  56
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                               ES06  57
C                                                                           ES06  58
          AEM(I) = .004 * Y * SHIFT(I)                                      ES06  59
          AEM(I) = EXEM(IL,I) * (1.-(((PEMN - AEM(I))/ PEMN -               ES06  60
     .              EXEFF(IL,I)) / (1.- EXEFF(IL,I))))                      ES06  61
  250 CONTINUE                                                              ES06  62
      GO TO 500                                                             ES06  63
  300 CONTINUE                                                              ES06  64
      M = M + 2                                                             ES06  65
      IF (M .LT. 10) GO TO 200                                              ES06  66
      WRITE (8,91) ISIC(I),ISITE(I),PPER                                    ES06  67
   91 FORMAT('0**EST06A- SOURCE ',I4,I5,' PE VALUE OF ',F8.0,' EXCEEDS TES06  68
     .ABLE LIMIT, STANDARD CANNOT BE APPLIED.')                             ES06  69
          AEM(I) = -1.0                                                     ES06  70
      GO TO 500                                                             ES06  71
  400 CONTINUE                                                              ES06  72
      WRITE (8,90) ISIC(I),ISITE(I),PPER                                    ES06  73
   90 FORMAT('0**EST06B- SOURCE ',I4,I5,' PE VALUE OF ',F8.2,' LESS THANES06  74
     . MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.')     ES06  75
          AEM(I) = EXEM(IPOL,I)                                             ES06  76
          IERR = 1                                                          ES06  77
  500 CONTINUE                                                              ES06  78
      RETURN                                                                ES06  79
      END                                                                   ES06  80
```

SUBPROGRAM EST07

PURPOSE

The subprogram EST07 calculates the allowable emissions for a source based on potential emissions which are calculated from existing source information.

CALLING SEQUENCE

CALL EST07

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If open burning is to be eliminated, set burn flag and exit.
2. Compute potential emission.
3. If potential emission is in graph range, calculate allowable emission and exit.
4. If potential emission is greater than graph range, determine if a suitable range exists; if not, write error, and exit.
5. If potential emission is less than graph range, write error, and exit.

SUBROUTINES

None

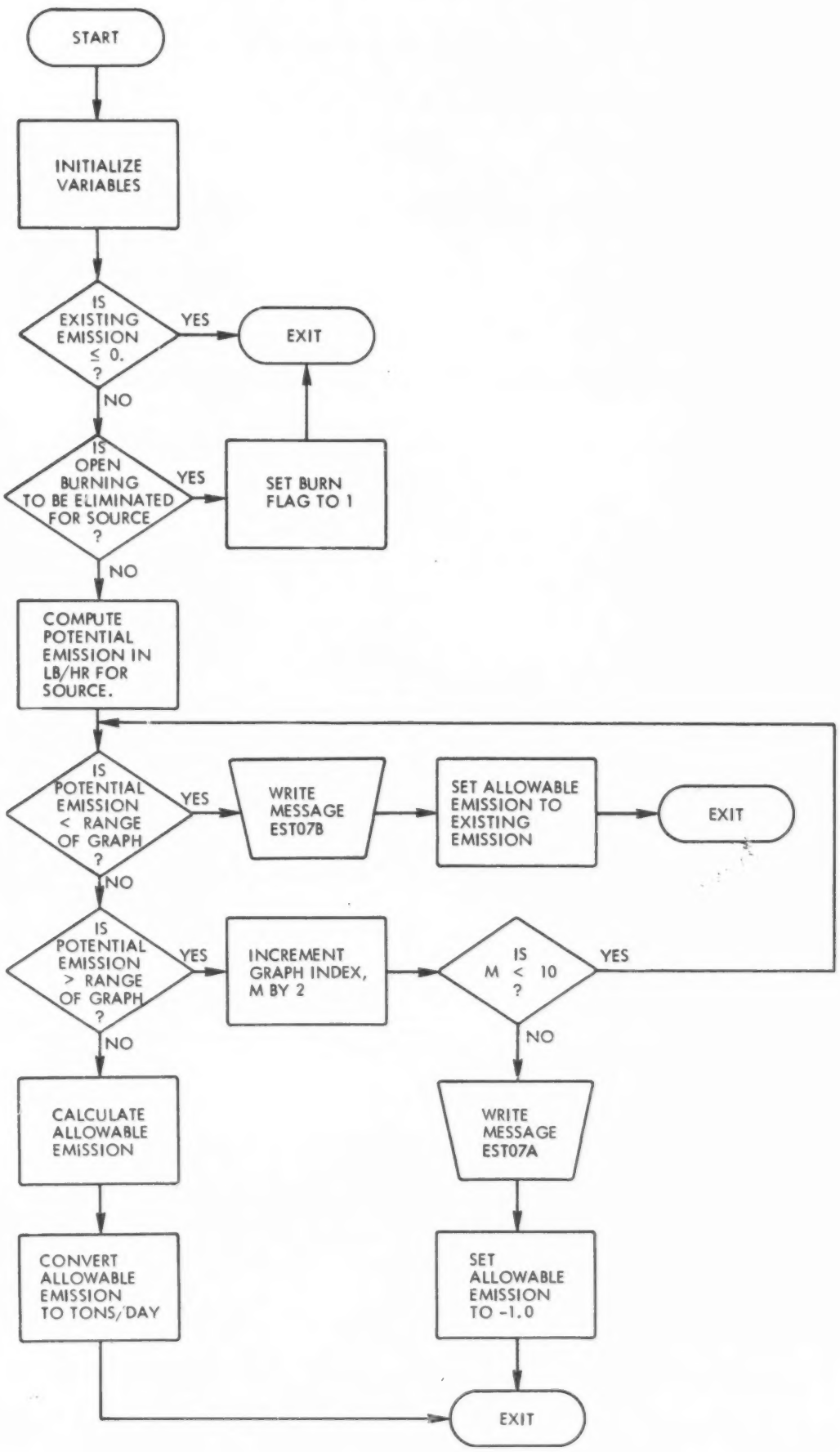
INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

BURN Common block containing flag for elimination of open burning.

DVICE Common block containing flags for internal program functions.

TABS Common block containint emission standard inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0. ?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
NO
COMPUTE POTENTIAL EMISSION IN LB/HR FOR SOURCE.
IS POTENTIAL EMISSION < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST07B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS POTENTIAL EMISSION > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX, M BY 2
IS M < 10 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE EST07A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST07                                                      ES07   1
C                                                                           ES07   2
C    POTENTIAL EMISSION CURVE STANDARD                                      ES07   3
C                                                                           ES07   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,       ES07   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                       ES07   6
     .            NOBN19,NOBN20                                             ES07   7
      COMMON /DVICE/          IERR,IREGON,IBURN                             ES07   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES07   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES07  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES07  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES07  12
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN,EXEFF(2,25)                   ES07  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES07  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES07  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES07  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES07  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES07  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES07  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES07  20
C                                                                           ES07  21
          NREG = 0                                                          ES07  22
      IL = IPOL                                                             ES07  23
      IS = ICLASS                                                           ES07  24
      I = 1                                                                 ES07  25
C                                                                           ES07  26
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                                  ES07  27
          NREG = 7                                                          ES07  28
C  NO OPEN BURNING SECTION                                                  ES07  29
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 510                          ES07  30
      IF(NOBN05 .NE. 1) GO TO 510                                           ES07  31
      IF (ISIC(1) .NE. 4953) GO TO 510                                      ES07  32
      IP = MOD(ISITE(1),10)                                                 ES07  33
      IF (IP .NE. 2) GO TO 510                                              ES07  34
          IBURN = 1                                                         ES07  35
      GO TO 500                                                             ES07  36
  510 CONTINUE                                                              ES07  37
C COMPUTE POT.  EMISSION (LBS/HR) FOR SOURCE I.                             ES07  38
C                                                                           ES07  39
      PPER = 250. * PEMN / SHIFT(I)                                         ES07  40
      M = 2                                                                 ES07  41
  200 CONTINUE                                                              ES07  42
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES07  43
C                                                                           ES07  44
      IF(PPER .LT. TAB07(M,IL,IS)) GO TO 400                                ES07  45
C                                                                           ES07  46
      IF(PPER .GT. TAB07(M+2,IL,IS)) GO TO 300                              ES07  47
C                                                                           ES07  48
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/HOUR)     FROM GRAPH (Y=MX+B)    ES07  49
C                                                                           ES07  50
          YLOG = (ALOG10(TAB07(M+3,IL,IS))- ALOG10(TAB07(M+1,IL,IS))) /     ES07  51
     .           (ALOG10(TAB07(M+2,IL,IS))- ALOG10(TAB07(M,IL,IS))) *      ES07  52
     .           (ALOG10(PPER)- ALOG10(TAB07(M,IL,IS)))                     ES07  53
     .         +  ALOG10(TAB07(M+1,IL,IS))                                  ES07  54
```

```
      Y = 10. **YLOG                                                    ES07  55
C                                                                       ES07  56
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES07  57
C                                                                       ES07  58
      AEM(I) = .004 * Y * SHIFT(I)                                      ES07  59
      AEM(I) = EXEM(IL,I) * (1.-(((PEMN - AEM(I))/ PEMN -               ES07  60
     *           EXEFF(IL,I)) / (1.- EXEFF(IL,I))))                     ES07  61
  250 CONTINUE                                                          ES07  62
      GO TO 500                                                         ES07  63
  300 CONTINUE                                                          ES07  64
      M = M + 2                                                         ES07  65
      IF (M .LT. 10) GO TO 200                                          ES07  66
      WRITE (8,91) ISIC(I),ISITE(I),PPER                                ES07  67
   91 FORMAT('0**EST07A- SOURCE ',I4,I5,' PE VALUE OF ',F8.0,' EXCEEDS TES07  68
     .ABLE LIMIT, STANDARD CANNOT BE APPLIED.')                         ES07  69
      AEM(I) = -1.0                                                     ES07  70
      GO TO 500                                                         ES07  71
  400 CONTINUE                                                          ES07  72
      WRITE (8,90) ISIC(I),ISITE(I),PPER                                ES07  73
   90 FORMAT('0**EST07B- SOURCE ',I4,I5,' PE VALUE OF ',F8.2,' LESS THANES07  74
     . MINIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSION.') ES07  75
      AEM(I) = EXEM(IPOL,I)                                             ES07  76
      IERR = 1                                                          ES07  77
  500 CONTINUE                                                          ES07  78
      RETURN                                                            ES07  79
      END                                                               ES07  80
```

SUBPROGRAM EST08

PURPOSE

The subprogram EST08 calculates the allowable emissions for fuel combustion sources using the rated capacity and the heat input and correcting the emissions to reflect the actual operating conditions instead of the designed conditions.

CALLING SEQUENCE

CALL EST08

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If source is not fuel combustion or existing emission is zero, exit.
2. Compute total heat input
3. If heat input is in range of graph, calculate allowable emission and exit.
4. If heat input is greater than graph range, determine if a suitable range exists; if not, write error and exit.
5. If heat input is less than graph range, write error, and exit.

SUBROUTINES

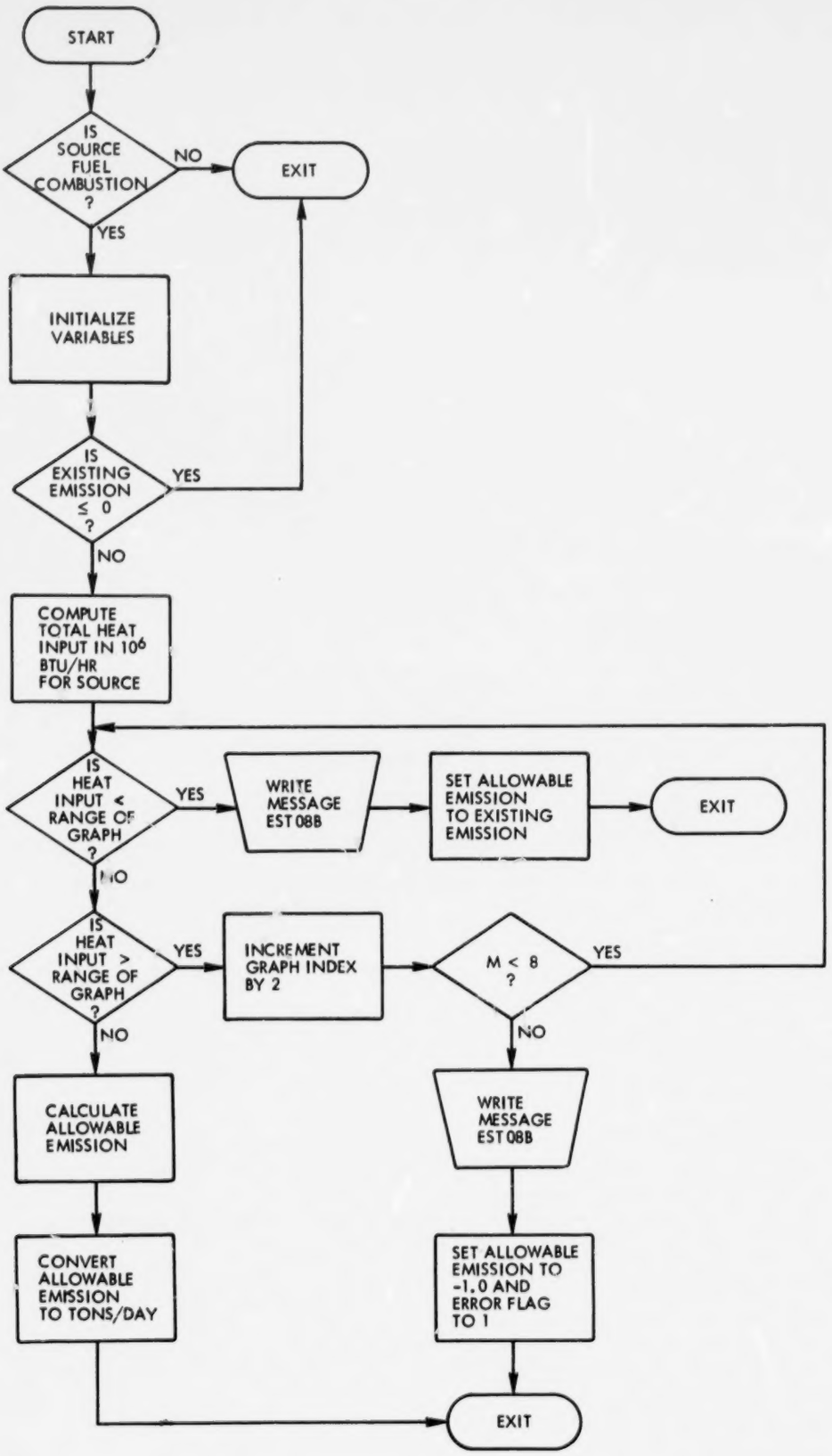
None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

DVICE Common block containing flags for internal program functions.

TABS Common block containing emission standard inputs.


START
IS SOURCE FUEL COMBUSTION ?
NO
EXIT
YES
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0 ?
YES
NO
COMPUTE TOTAL HEAT INPUT IN 10^6 BTU/HR FOR SOURCE
IS HEAT INPUT < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST 08B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS HEAT INPUT > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX BY 2
M < 8 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE EST 08B
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0 AND ERROR FLAG TO 1
EXIT

```
      SUBROUTINE EST08                                                  ES08   1
C                                                                       ES08   2
C RATED CAPACITY INPUT STANDARD 8                                       ES08   3
C                                                                       ES08   4
      COMMON /DVICE/          IERR,IREGON,IBURN,DER                     ES08   5
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),     ES08   6
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25), ES08   7
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),     ES08   8
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),          ES08   9
     .FQTY(4,25),IGAS(25),FQN(4)                                        ES08  10
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES08  11
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),        ES08  12
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),        ES08  13
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),        ES08  14
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),        ES08  15
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),        ES08  16
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                       ES08  17
C                                                                       ES08  18
          NREG = 0                                                      ES08  19
      IF (ICLASS .GT. 1) GO TO 500                                      ES08  20
      I = 1                                                             ES08  21
      IL = IPOL                                                         ES08  22
      IS = ICLASS                                                       ES08  23
C                                                                       ES08  24
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                              ES08  25
          NREG = 8                                                      ES08  26
C COMPUTE TOTAL HEAT INPUT (10**6BTU/HR) FOR SOURCE I.                  ES08  27
C                                                                       ES08  28
      TBTU=(BTU(  1) / 10.**6)                                          ES08  29
  150 CONTINUE                                                          ES08  30
      M = 2                                                             ES08  31
  200 CONTINUE                                                          ES08  32
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                               ES08  33
C                                                                       ES08  34
      IF(TBTU .LT. TAB08(M,IL,IS)) GO TO 400                            ES08  35
C                                                                       ES08  36
      IF(TBTU .GT. TAB08(M+2,IL,IS)) GO TO 300                          ES08  37
C                                                                       ES08  38
C CALCULATE ALLOWABLE EMISSION (Y-AXIS:LBS/10**6BTU) FROM GRAPH (Y=MX+B)ES08  39
C                                                                       ES08  40
          YLOG = (ALOG10(TAB08(M+3,IL,IS))- ALOG10(TAB08(M+1,IL,IS))) / ES08  41
     .           (ALOG10(TAB08(M+2,IL,IS))- ALOG10(TAB08(M,IL,IS))) *   ES08  42
     .           (ALOG10(TBTU)- ALOG10(TAB08(M,IL,IS)))                 ES08  43
     .         + ALOG10(TAB08(M+1,IL,IS))                               ES08  44
          Y = 10. **YLOG                                                ES08  45
C                                                                       ES08  46
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES08  47
C                                                                       ES08  48
          AEM(I) = .004 * Y * TBTU * SHIFT(I)                           ES08  49
          AEM(1) = EXEM(IL,1) * (AEM(1) / DER)                          ES08  50
  250 CONTINUE                                                          ES08  51
      GO TO 500                                                         ES08  52
  300 CONTINUE                                                          ES08  53
      M = M + 2                                                         ES08  54
      IF (M .LT. 8 ) GO TO 200                                          ES08  55
      WRITE (8,91) ISIC(I),ISITE(I),TBTU                                ES08  56
   91 FORMAT('0**EST08A- SOURCE ',2I4,' HI VALUE OF ',F8.0,' EXCEEDS TABLES08  57
     .LE LIMIT, STANDARD CANNOT BE APPLIED.')                           ES08  58
          AEM(I) = -1.0                                                 ES08  59
      GO TO 500                                                         ES08  60
  400 CONTINUE                                                          ES08  61
      WRITE (8,90) ISIC(I),ISITE(I),TBTU                                ES08  62
   90 FORMAT('0**EST08B- SOURCE ',2I4,' HI VALUE OF ',F8.2,' LESS THAN MES08  63
     .INIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSIONS.')  ES08  64
          AEM(I) = EXEM(IPOL,I)                                         ES08  65
          IERR = 1                                                      ES08  66
  500 CONTINUE                                                          ES08  67
      RETURN                                                            ES08  68
      END                                                               ES08  69
```

SUBPROGRAM EST09

PURPOSE

The subroutine EST09 calculates the allowable emissions for fuel combustion sources using the rated capacity and the heat input and correcting the emissions to reflect the actual operation conditions instead of the designed conditions.

CALLING SEQUENCE

CALL EST09

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If source is not fuel combustion or existing emission is zero, exit.
2. Compute total heat input.
3. If heat input is in range of graph, calculate allowable emission and exit.
4. If heat input is greater than graph range, determine if a suitable range exists; if not, write error and exit.
5. If heat input is less than graph range, write error and exit.

SUBROUTINES

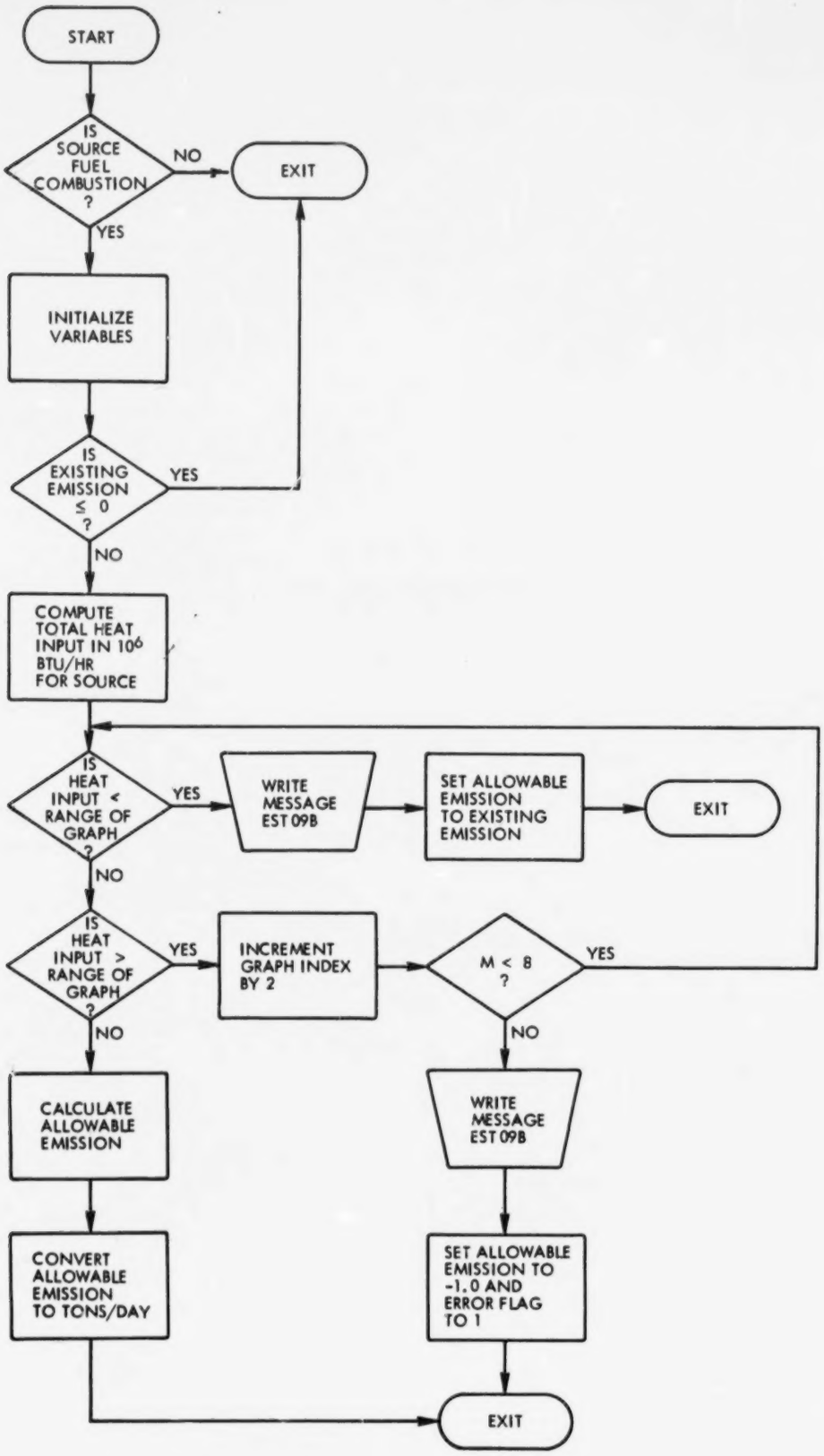
None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

DVICE Common block containing flags for internal program functions.

TABS Common block contianing emission standard inputs.


START
IS SOURCE FUEL COMBUSTION ?
NO
EXIT
YES
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0 ?
YES
NO
COMPUTE TOTAL HEAT INPUT IN 10^6 BTU/HR FOR SOURCE
IS HEAT INPUT < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST 09B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS HEAT INPUT > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX BY 2
M < 8 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE EST 09B
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0 AND ERROR FLAG TO 1
EXIT

```
      SUBROUTINE EST09                                                      ES09   1
C                                                                           ES09   2
C RATED CAPACITY INPUT STANDARD 9                                           ES09   3
C                                                                           ES09   4
      COMMON /DVICE/          IERR,IREGON,IBURN,DER                         ES09   5
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES09   6
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES09   7
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES09   8
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES09   9
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES09  10
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES09  11
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES09  12
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES09  13
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),,TAB16( 2,2,3),           ES09  14
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES09  15
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES09  16
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES09  17
C                                                                           ES09  18
          NREG = 0                                                          ES09  19
      IF (ICLASS .GT. 1) GO TO 500                                          ES09  20
      IL = IPOL                                                             ES09  21
      IS = ICLASS                                                           ES09  22
      I = 1                                                                 ES09  23
C                                                                           ES09  24
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                                  ES09  25
          NREG = 9                                                          ES09  26
C COMPUTE TOTAL HEAT INPUT (10**6BTU/HR) FOR SOURCE I.                      ES09  27
C                                                                           ES09  28
      TBTU=(BTU(  1) / 10.**6)                                              ES09  29
  150 CONTINUE                                                              ES09  30
      M = 2                                                                 ES09  31
  200 CONTINUE                                                              ES09  32
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES09  33
C                                                                           ES09  34
      IF(TBTU .LT. TAB09(M,IL,IS)) GO TO 400                                ES09  35
C                                                                           ES09  36
      IF(TBTU .GT. TAB09(M+2,IL,IS)) GO TO 300                              ES09  37
C                                                                           ES09  38
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/10**6BTU) FROM GRAPH (Y=MX+B)ES09  39
C                                                                           ES09  40
          YLOG = (ALOG10(TAB09(M+3,IL,IS))- ALOG10(TAB09(M+1,IL,IS))) /    ES09  41
     .           (ALOG10(TAB09(M+2,IL,IS))- ALOG10(TAB09(M,IL,IS))) *      ES09  42
     .           (ALOG10(TBTU)- ALOG10(TAB09(M,IL,IS)))                     ES09  43
     .         + ALOG10(TAB09(M+1,IL,IS))                                   ES09  44
          Y = 10. **YLOG                                                    ES09  45
C                                                                           ES09  46
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                               ES09  47
C                                                                           ES09  48
          AEM(I) = .004 * Y * TBTU * SHIFT(I)                               ES09  49
          AEM(1) = EXEM(IL,1) * (AEM(1) / DER)                              ES09  50
  250 CONTINUE                                                              ES09  51
      GO TO 500                                                             ES09  52
  300 CONTINUE                                                              ES09  53
      M = M + 2                                                             ES09  54
      IF (M .LT. 8 ) GO TO 200                                              ES09  55
      WRITE (8,91) ISIC(I),ISITE(I),TBTU                                    ES09  56
   91 FORMAT('0**EST09A- SOURCE ',2I4,' HI VALUE OF ',F8.0,' EXCEEDS TABLESES09  57
     .E LIMIT, STANDARD CANNOT BE APPLIED.')                                ES09  58
          AEM(I) = -1.0                                                     ES09  59
      GO TO 500                                                             ES09  60
  400 CONTINUE                                                              ES09  61
      WRITE (8,90) ISIC(I),ISITE(I),TBTU                                    ES09  62
   90 FORMAT('0**EST09B- SOURCE ',2I4,' HI VALUE OF ',F8.2,' LESS THAN MESS09  63
     .INIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSIONS.')      ES09  64
          AEM(I) = EXEM(IPOL,I)                                             ES09  65
          IEPR = 1                                                          ES09  66
  500 CONTINUE                                                              ES09  67
      RETURN                                                                ES09  68
      END                                                                   ES09  69
```

SUBPROGRAM EST10

PURPOSE

The subprogram EST10 calculates the allowable emissions for fuel combustion sources using the rated capacity and the heat input and correcting the emissions to reflect the actual operating conditions instead of the designed conditions.

CALLING SEQUENCE

CALL EST10

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

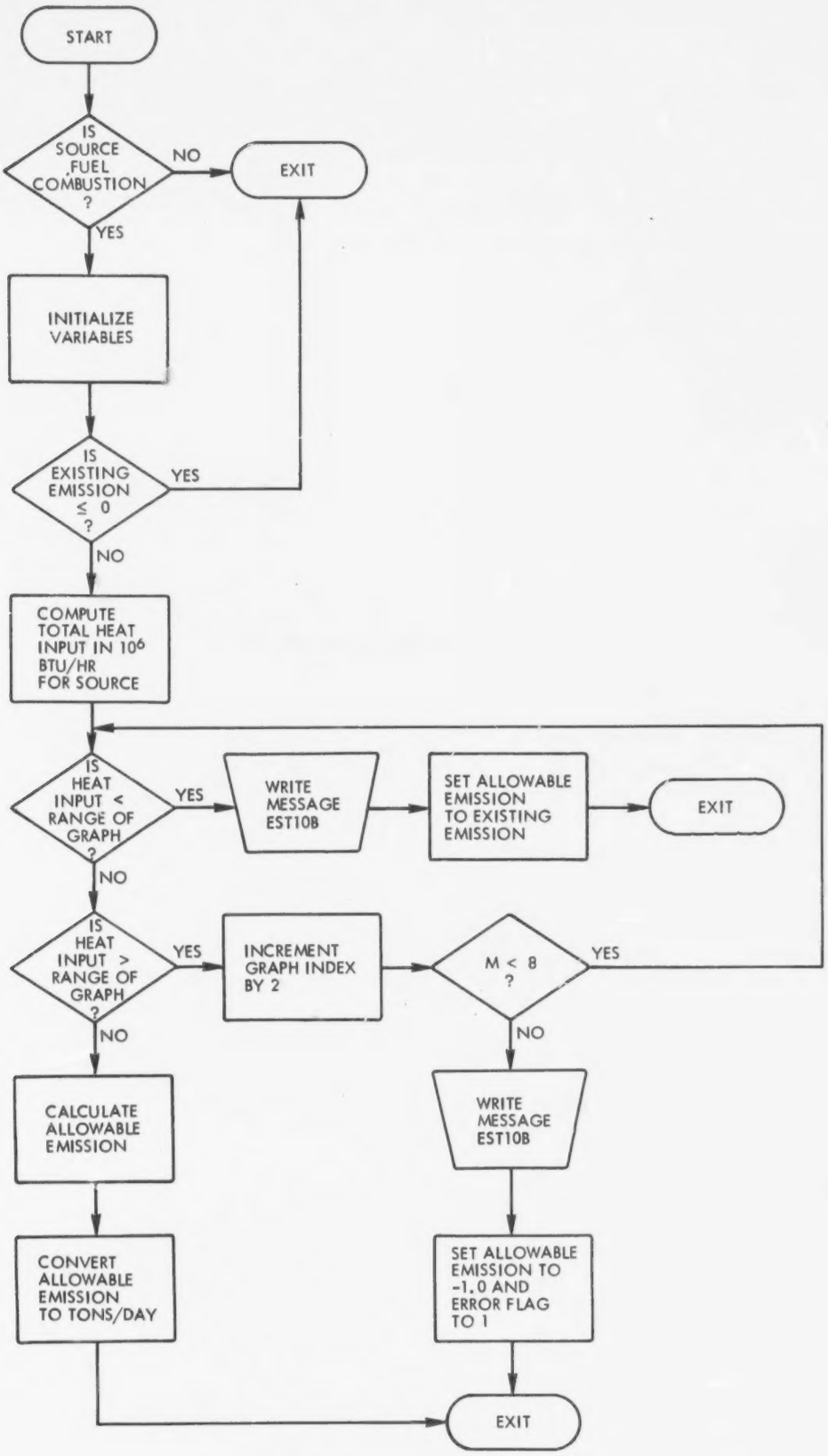
1. If source is not fuel combustion or existing emission is zero, exit.
2. Compute total heat input.
3. If heat input is in range of graph, calculate allowable emission and exit.
4. If heat input is greater than range of graph, determine if a suitable range exists; if not, write error and exit.
5. If heat input is less than range of graph, write error and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
IS SOURCE FUEL COMBUSTION ?
NO
EXIT
YES
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0 ?
YES
NO
COMPUTE TOTAL HEAT INPUT IN 10^6 BTU/HR FOR SOURCE
IS HEAT INPUT < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST10B
SET ALLOWABLE EMISSION TO EXISTING EMISSION
EXIT
NO
IS HEAT INPUT > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX BY 2
M < 8 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION
WRITE MESSAGE EST10B
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0 AND ERROR FLAG TO 1
EXIT

```
      SUBROUTINE EST10                                                      ES10   1
C                                                                           ES10   2
C RATED CAPACITY INPUT STANDARD 10                                          ES10   3
C                                                                           ES10   4
      COMMON /DVICE/          IERR,IREGON,IBURN,DER                         ES10   5
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES10   6
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES10   7
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES10   8
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES10   9
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES10  10
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES10  11
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES10  12
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES10  13
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES10  14
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES10  15
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES10  16
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES10  17
C                                                                           ES10  18
          NREG = 0                                                          ES10  19
      IF (ICLASS .GT. 1) GO TO 500                                          ES10  20
      IL = IPOL                                                             ES10  21
      IS = ICLASS                                                           ES10  22
      I = 1                                                                 ES10  23
C                                                                           ES10  24
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 250                                  ES10  25
          NREG = 10                                                         ES10  26
C COMPUTE TOTAL HEAT INPUT (10**6 BTU/HR) FOR SOURCEI.                      ES10  27
C                                                                           ES10  28
          TBTU = (BTU(1) / 10.**6)                                          ES10  29
  150 CONTINUE                                                              ES10  30
      M = 2                                                                 ES10  31
  200 CONTINUE                                                              ES10  32
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES10  33
C                                                                           ES10  34
      IF(TBTU .LT. TAB10(M,IL,IS)) GO TO 400                                ES10  35
C                                                                           ES10  36
      IF(TBTU .GT. TAB10(M+2,IL,IS)) GO TO 300                              ES10  37
C                                                                           ES10  38
C CALCULATE ALLOWABLE EMISSION (Y-AXIS:LBS/10**6BTU) FROM GRAPH (Y=MX+B)    ES10  39
C                                                                           ES10  40
          YLOG = (ALOG10(TAB10(M+3,IL,IS))- ALOG10(TAB10(M+1,IL,IS))) /     ES10  41
     .           (ALOG10(TAB10(M+2,IL,IS))- ALOG10(TAB10(M,IL,IS))) *       ES10  42
     .           (ALOG10(TBTU)- ALOG10(TAB10(M,IL,IS)))                     ES10  43
     .         +  ALOG10(TAB10(M+1,IL,IS))                                  ES10  44
C                                                                           ES10  45
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                               ES10  46
          Y = 10. **YLOG                                                    ES10  47
C                                                                           ES10  48
          AEM(I) = .004 * Y * SHIFT(I)                                      ES10  49
          AEM(1) = EXEM(IL,1) * (AEM(1) / DER)                              ES10  50
  250 CONTINUE                                                              ES10  51
      GO TO 500                                                             ES10  52
  300 CONTINUE                                                              ES10  53
      M = M + 2                                                             ES10  54
      IF (M .LT. 8 ) GO TO 200                                              ES10  55
      WRITE (8,91) ISIC(I),ISITE(I),TBTU                                    ES10  56
   91 FORMAT('0**EST10A- SOURCE ',2I4,' HI VALUE OF ',F10.0,' EXCEEDS TAES10  57
     .BLE LIMIT, STANDARD CANNOT BE APPLIED.')                              ES10  58
      '    AEM(I) = -1.0                                                    ES10  59
      GO TO 500                                                             ES10  60
  400 CONTINUE                                                              ES10  61
      WRITE (8,90) ISIC(I),ISITE(I),TBTU                                    ES10  62
   90 FORMAT('0**EST10B- SOURCE ',2I4,' HI VALUE OF ',F8.2,' LESS THAN MES10  63
     .INIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSIONS.')      ES10  64
          AEM(I) = EXEM(IPOL,I)                                             ES10  65
          IERR = 1                                                          ES10  66
  500 CONTINUE                                                              ES10  67
      RETURN                                                                ES10  68
      END                                                                   ES10  69
```

SUBPROGRAM EST 11

The subprogram EST11 calculates allowable emissions for fuel combustion sources based on input heat capacity and physical stack height.

CALLING SEQUENCE

CALL EST11

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

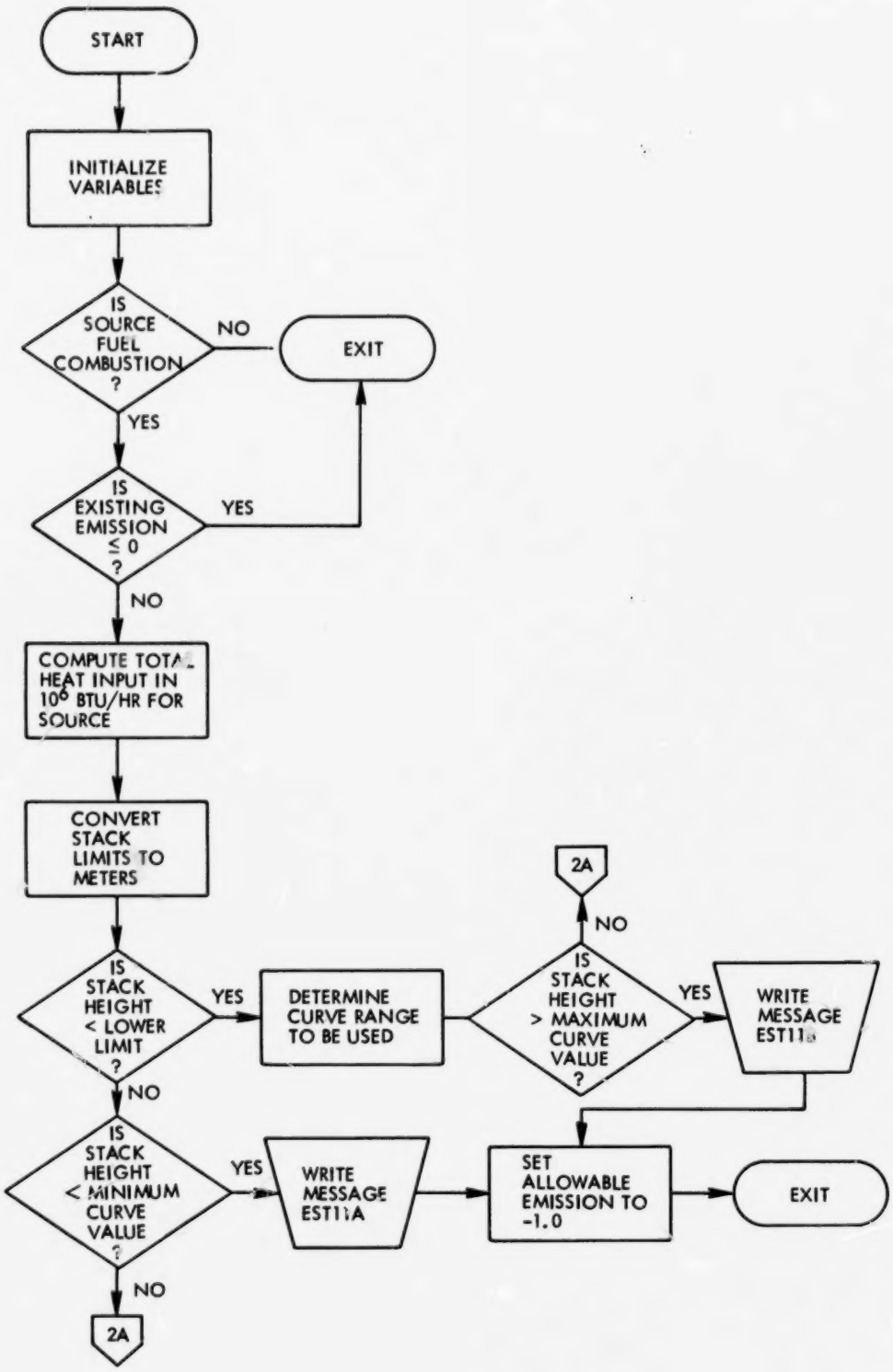
1. If source is not fuel combustion or emission is zero, exit
2. Compute total heat input
3. If stack height less than lower limit, determine graph range, and if stack height greater than the maximum curve value, write error and exit; else skip to 5.
4. If stack height is less than minimum curve value, write error and exit.
5. If heat input in graph range, compute allowable emissions and exit.
6. If heat input cannot fit graph, write error and exit.

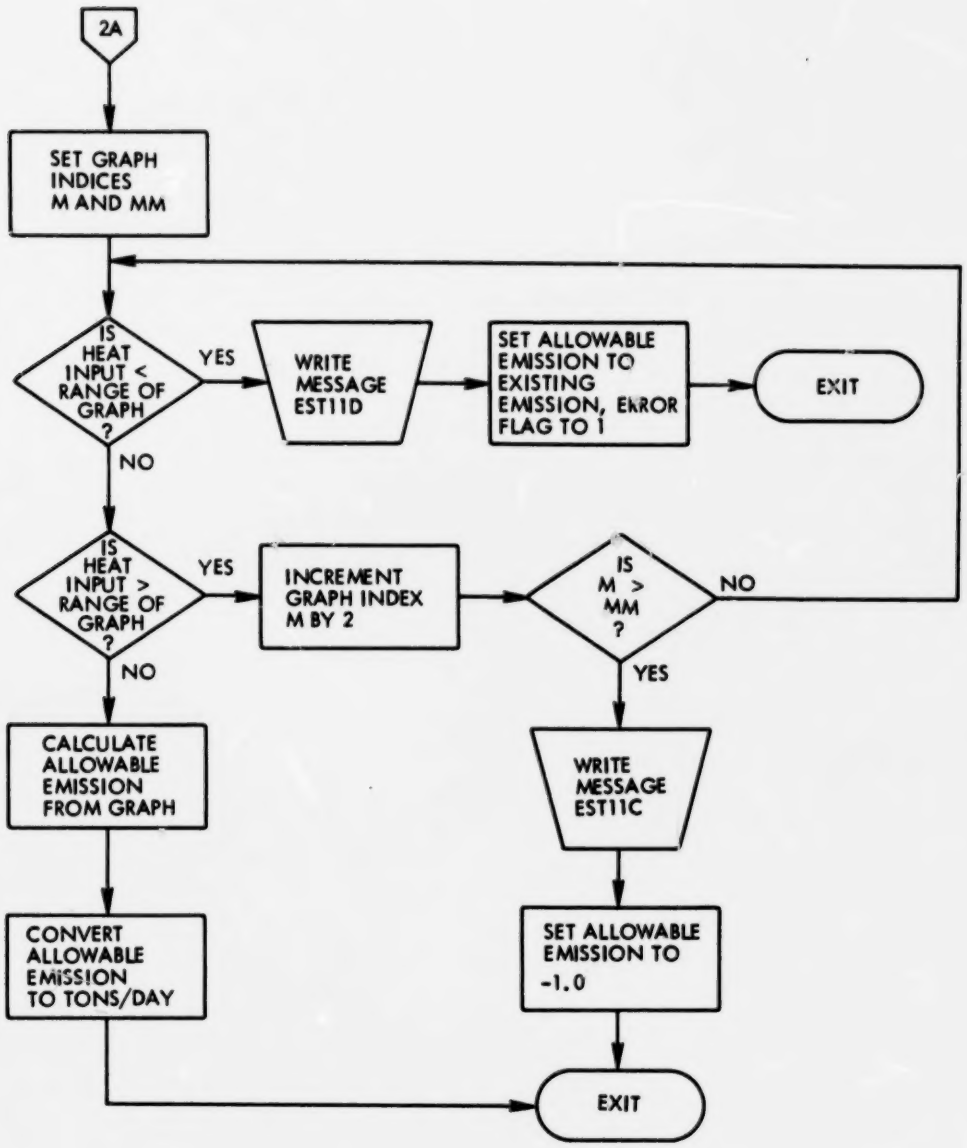
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS SOURCE FUEL COMBUSTION ?
NO
EXIT
YES
IS EXISTING EMISSION ≤ 0 ?
YES
NO
COMPUTE TOTAL HEAT INPUT IN 10^6 BTU/HR FOR SOURCE
CONVERT STACK LIMITS TO METERS
IS STACK HEIGHT < LOWER LIMIT ?
YES
DETERMINE CURVE RANGE TO BE USED
2A
NO
IS STACK HEIGHT > MAXIMUM CURVE VALUE ?
YES
WRITE MESSAGE EST11B
NO
IS STACK HEIGHT < MINIMUM CURVE VALUE ?
YES
WRITE MESSAGE EST11A
SET ALLOWABLE EMISSION TO -1.0
EXIT
NO
2A


2A
SET GRAPH INDICES M AND MM
IS HEAT INPUT < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST11D
SET ALLOWABLE EMISSION TO EXISTING EMISSION, ERROR FLAG TO 1
EXIT
NO
IS HEAT INPUT > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX M BY 2
IS M > MM ?
NO
YES
NO
CALCULATE ALLOWABLE EMISSION FROM GRAPH
WRITE MESSAGE EST11C
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST11                                                      ES11   1
C  HEAT INPUT CURVES VS. PHYSICAL STACK HEIGHT                              ES11   2
C                                                                           ES11   3
      COMMON /DVICE/          IERR,IPEGON,IBURN,DER                         ES11   4
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES11   5
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES11   6
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES11   7
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES11   8
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES11   9
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES11  10
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES11  11
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES11  12
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES11  13
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES11  14
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES11  15
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES11  16
          NREG = 0                                                          ES11  17
          I = 1                                                             ES11  18
      IF (ICLASS .GT. 1) GO TO 700                                          ES11  19
      IF (EXEM(IPOL,I) .LE. 0.0) GO TO 500                                  ES11  20
          NREG = 11                                                         ES11  21
C  COMPUTE  TOTAL HEAT INPUT FOR SOURCE I (10**6 BTU/HR).                   ES11  22
C                                                                           ES11  23
      TBTU=(BTU(  1) / 10.**6)                                              ES11  24
          IL = IPOL                                                         ES11  25
C                                                                           ES11  26
C  CONVERT TABLE STACK LIMITS FROM FEET TO METERS                           ES11  27
C                                                                           ES11  28
      DO 50 N=2,44,7                                                        ES11  29
          TAB11(N,IL,1) = TAB11(N,IL,1) * 0.3048                            ES11  30
   50 CONTINUE                                                              ES11  31
C                                                                           ES11  32
C  CHECK IF STACK < LOWER LIMIT                                             ES11  33
      IF (HS(I) .GE. TAB11(2,IL,1)) GO TO 200                               ES11  34
          ARG1 = TAB11(2,IL,1) - HS(I)                                      ES11  35
          ARG2 = (TAB11(9,IL,1) - TAB11(2,IL,1)) / 2.                       ES11  36
      IF (ARG1 .GT. ARG2) GO TO 600                                         ES11  37
          NN = 3                                                            ES11  38
      GO TO 300                                                             ES11  39
  200 CONTINUE                                                              ES11  40
C  DETERMINE CURVE RANGE TO BE APPLIED                                      ES11  41
C                                                                           ES11  42
      DO 250 N=2,37,7                                                       ES11  43
          NN = N                                                            ES11  44
      IF(HS(I) .GE. TAB11(N,IL,1) .AND. HS(I) .LE. TAB11(N+7,IL,1))         ES11  45
     .    GO TO 210                                                        ES11  46
      GO TO 250                                                             ES11  47
  210 CONTINUE                                                              ES11  48
          ARG1 = HS(I) - TAB11(N,IL,1)                                      ES11  49
          ARG2 = (TAB11(N+7,IL,1) - TAB11(N,IL,1)) / 2.                     ES11  50
      IF (ARG1 .GT. ARG2)  NN = N + 7                                       ES11  51
      GO TO 300                                                             ES11  52
  250 CONTINUE                                                              ES11  53
          ARG1 = HS(I) - TAB11(44,IL,1)                                     ES11  54
```

```
      ARG2 = (TAB11(44,IL,1) - TAB11(37,IL,1)) / 2.                    ES11  55
      IF (ARG1 .GT. ARG2) GO TO 650                                    ES11  56
      NN = 44                                                          ES11  57
  300 CONTINUE                                                         ES11  58
      M = NN + 1                                                       ES11  59
      MM = NN + 6                                                      ES11  60
  350 CONTINUE                                                         ES11  61
C  DETERMINE GRAPH INTERVAL FOR THE SOURCE                            ES11  62
C                                                                      ES11  63
      IF (TBTU .LT. TAB11(M,IL,1)) GO TO 850                           ES11  64
C                                                                      ES11  65
      IF (TBTU .GT. TAB11(M+2,IL,1)) GO TO 400                         ES11  66
C                                                                      ES11  67
C  CALCULATE ALLOWABLE EMISSION (Y-AXIS:LBS/10**6BTU) FROM GRAPH.      ES11  68
C                                                                      ES11  69
      YLOG = (ALOG10(TAB11(M+3,IL,1))- ALOG10(TAB11(M+1,IL,1))) /      ES11  70
     .       (ALOG10(TAB11(M+2,IL,1))- ALOG10(TAB11(M,IL,1))) *        ES11  71
     .       (ALOG10(TBTU) - ALOG10(TAB11(M,IL,1))) +                  ES11  72
     .        ALOG10(TAB11(M+1,IL, 1))                                 ES11  73
      Y = 10. ** YLOG                                                  ES11  74
C                                                                      ES11  75
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                          ES11  76
C                                                                      ES11  77
      AEM(I) = .004 * Y * TBTU * SHIFT(I)                              ES11  78
      AEM(I) = EXEM(IL,I) * (AEM(I) / DER)                             ES11  79
  500 CONTINUE                                                         ES11  80
      GO TO 700                                                        ES11  81
  400 CONTINUE                                                         ES11  82
      M = M +2                                                         ES11  83
      IF (M .GE. MM-1) GO TO 800                                       ES11  84
      GO TO 350                                                        ES11  85
  600 CONTINUE                                                         ES11  86
      WRITE (8,92) ISIC(I),ISITE(I)                                    ES11  87
   92 FORMAT('0**EST11A- SOURCE ',2I4,' PHYSICAL STACK HEIGHT IS LESS THES11  88
     .AN MINIMUM CURVE VALUE- STANDARD CANNOT BE APPLIED.')            ES11  89
      AEM(I) = -1.0                                                    ES11  90
      GO TO 700                                                        ES11  91
  650 CONTINUE                                                         ES11  92
      WRITE (8,93) ISIC(I),ISITE(I)                                    ES11  93
   93 FORMAT('0**EST11B- SOURCE ',2I4,' PHYSICAL STACK HEIGHT EXCEEDS MAES11  94
     .XIMUM CURVE VALUE- STANDARD CANNOT BE APPLIED.')                 ES11  95
      AEM(I) = -1.0                                                    ES11  96
      GO TO 700                                                        ES11  97
  800 CONTINUE                                                         ES11  98
      WRITE (8,91) ISIC(I),ISITE(I),TBTU                               ES11  99
   91 FORMAT('0**EST11C- SOURCE ',2I4,' HI VALUE OF ',F10.0,' EXCEEDS TAES11 100
     .BLE LIMIT, STANDARD CANNOT BE APPLIED.')                         ES11 101
      AEM(I) = -1.0                                                    ES11 102
      GO TO 700                                                        ES11 103
  850 CONTINUE                                                         ES11 104
      WRITE (8,90) ISIC(I),ISITE(I),TBTU                               ES11 105
   90 FORMAT('0**EST11D- SOURCE ',2I4,' HI VALUE OF ',F8.2,' LESS THAN MES11 106
     .INIMUM TABLE VALUE, ALLOWABLE SET EQUAL TO EXISTING EMISSIONS.')  ES11 107
      AEM(I) = EXEM(IPOL,I)                                            ES11 108
      IERR = 1                                                         ES11 109
  700 CONTINUE                                                         ES11 110
      RETURN                                                           ES11 111
      END                                                              ES11 112
```

SUBPROGRAM EST12

PURPOSE

The subprogram EST12 computes the allowable emissions based on the effective stack height which is calculated from the sources existing stack parameters and meterological parameters.

CALLING SEQUENCE

CALL EST12

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

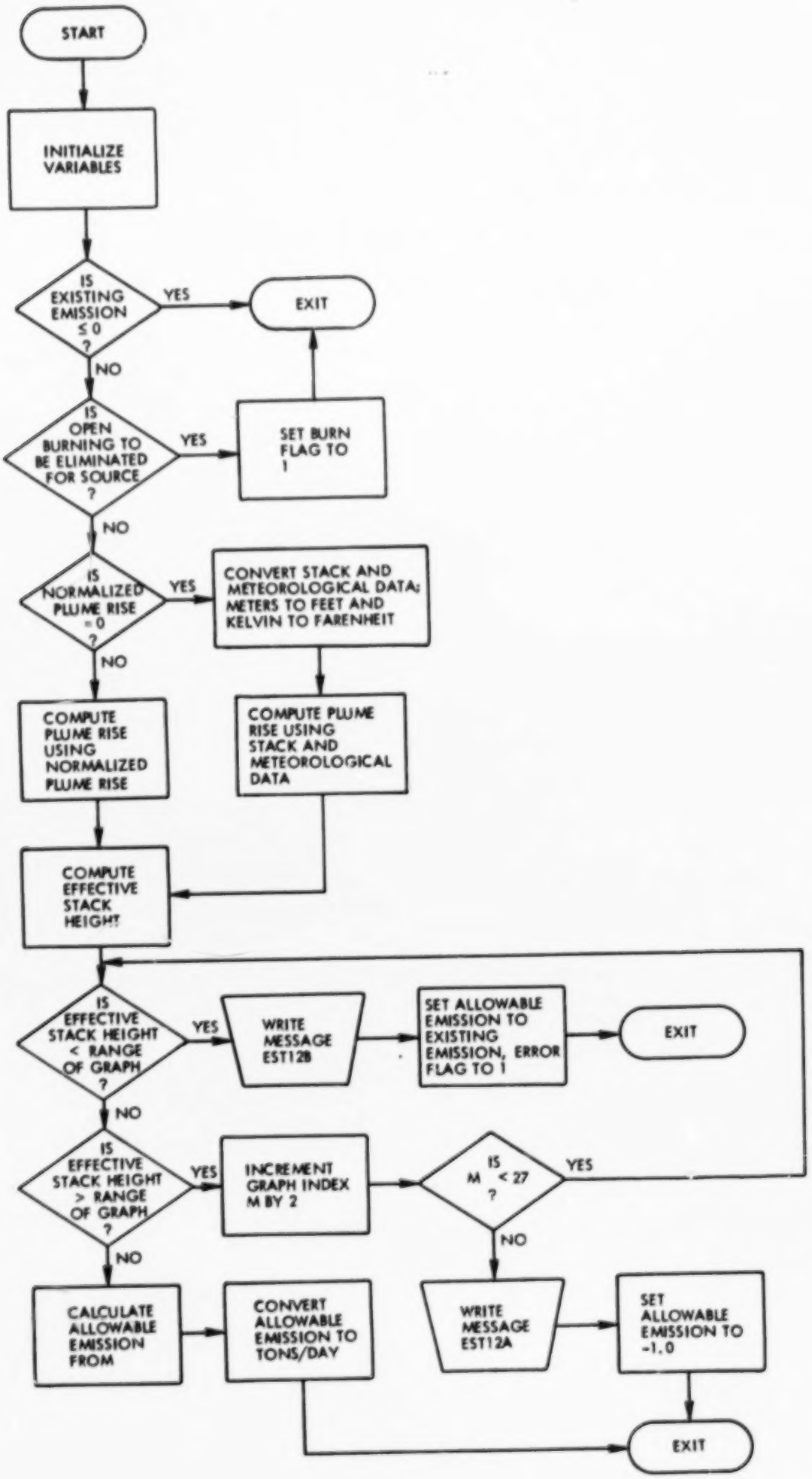
1. If open burning is to be eliminated, set burn flag and exit.
2. Compute effective stack height using normalized plume rise or stack and meteorological data.
3. If effective stack height is in range of graph, calculate allowable emission and exit.
4. If effective stack height cannot fit graph, write error and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
BURN	Common block containing flag for elimination of open burning.
TABS	Common block containing emission standars inputs.


START
INITIALIZE VARIABLES
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
NO
IS NORMALIZED PLUME RISE = 0 ?
YES
CONVERT STACK AND METEOROLOGICAL DATA; METERS TO FEET AND KELVIN TO FARENHEIT
NO
COMPUTE PLUME RISE USING NORMALIZED PLUME RISE
COMPUTE PLUME RISE USING STACK AND METEOROLOGICAL DATA
COMPUTE EFFECTIVE STACK HEIGHT
IS EFFECTIVE STACK HEIGHT < RANGE OF GRAPH ?
YES
WRITE MESSAGE EST12B
SET ALLOWABLE EMISSION TO EXISTING EMISSION, ERROR FLAG TO 1
EXIT
NO
IS EFFECTIVE STACK HEIGHT > RANGE OF GRAPH ?
YES
INCREMENT GRAPH INDEX M BY 2
IS M < 27 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION FROM
CONVERT ALLOWABLE EMISSION TO TONS/DAY
WRITE MESSAGE EST12A
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST12                                                      ES12   1
C                                                                           FS12   2
C     EFFECTIVE STACK HEIGHT  STANDARD 12                                   ES12   3
C                                                                           ES12   4
      COMMON/BURN/        NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,        ES12   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES12   6
     .             NOBN19,NOBN20                                            ES12   7
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES12   8
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES12   9
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES12  10
     .HTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES12  11
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25)                                    ES12  12
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES12  13
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES12  14
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES12  15
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES12  16
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES12  17
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES12  18
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES12  19
C                                                                           ES12  20
          NREG = 0                                                          ES12  21
      DH = 0.0                                                              ES12  22
C                                                                           ES12  23
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 250                                  ES12  24
          NREG = 12                                                         ES12  25
C  NO OPEN BURNING SECTION                                                  ES12  26
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 30                           ES12  27
      IF(NOBN12 .NE. 1) GO TO 30                                            ES12  28
      IF (ISIC(1) .NE. 4953) GO TO 30                                       ES12  29
      IP = MOD(ISITE(1),10)                                                 ES12  30
      IF (IP .NE. 2) GO TO 30                                               ES12  31
          IBURN = 1                                                         ES12  32
      GO TO 500                                                             ES12  33
   30 CONTINUE                                                              ES12  34
      IF (XNP(1) .EQ. 0.0) GO TO 40                                         ES12  35
C  COMPUTE PLUME RISE USING THE 'NORMALIZED PLUME RISE'.                    ES12  36
          DH = XNP(1) / TAB12(4,IPOL,ICLASS)                                ES12  37
          DH = DH * 3.2808                                                  ES12  38
      GO TO 50                                                              ES12  39
   40 CONTINUE                                                              ES12  40
C  CONVERT STACK AND METEORLOGICAL DATA- METERS TO FEET; KELVIN TO FARENES12  41
          VELFT = VEL(1) * 3.2808                                           ES12  42
          DIAFT = DIA(1) * 3.2808                                           ES12  43
          TEMPF = 1.8 * TEMP(1) - 459.724                                   ES12  44
          TAB12(4,IPOL,ICLASS) = TAB12(4,IPOL,ICLASS) * 3.2808              ES12  45
C  COMPUTE PLUME RISE USING STACK AND METEOROLOGICAL PARAMETERS             ES12  46
          DH = ((VELFT  * DIAFT ) / TAB12(4,IPOL,ICLASS)) *                 ES12  47
     .          (1.5 + 2.68E-3 * TAB12(3,IPOL,ICLASS) *                    ES12  48
     .          ((TEMPF   - TAB12(2,IPOL,ICLASS)) / TEMPF )  * DIAFT)      ES12  49
   50 CONTINUE                                                              ES12  50
       ESH = (HS(1) + DH) * 3.28                                            ES12  51
          M = 5                                                             ES12  52
  200 CONTINUE                                                              ES12  53
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES12  54
```

```
C                                                                       ES12  55
      IF (ESH .LT. TAB12(M,IPOL,ICLASS)) GO TO 400                      ES12  56
C                                                                       ES12  57
      IF (ESH .GT. TAB12(M+2,IPOL,ICLASS)) GO TO 300                    ES12  58
C                                                                       ES12  59
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/HOUR)     FROM GRAPH (Y=MX+B)ES12  60
C                                                                       ES12  61
          YLOG = (ALOG10(TAB12(M+3,IPOL,ICLASS)) -                      ES12  62
     .             ALOG10(TAB12(M+1,IPOL,ICLASS))) /                    ES12  63
     .            (ALOG10(TAB12(M+2,IPOL,ICLASS)) -                     ES12  64
     .             ALOG10(TAB12(M,IPOL,ICLASS))) * (ALOG10(ESH ) -      ES12  65
     .             ALOG10(TAB12(M,IPOL,ICLASS))) +                      ES12  66
     .             ALOG10(TAB12(M+1,IPOL,ICLASS))                       ES12  67
C                                                                       ES12  68
          Y = 10. ** YLOG                                               ES12  69
  225 CONTINUE                                                          ES12  70
C                                                                       ES12  71
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES12  72
C                                                                       ES12  73
          AEM(1) = .004 * Y * SHIFT(1)                                  ES12  74
  250 CONTINUE                                                          ES12  75
      GO TO 500                                                         ES12  76
  300 CONTINUE                                                          ES12  77
      M = M + 2                                                         ES12  78
      IF (M .LT. 27) GO TO 200                                          ES12  79
      WRITE (8,91) ISIC(1),ISITE(1),ESH                                 ES12  80
   91 FORMAT('0**EST12A- SOURCE ',2I4,'EFF. STACK HEIGHT OF ',F8.0,' EXCES12  81
     .EEDS TABLE LIMIT- STANDARD CANNOT BE APPLIED.')                   ES12  82
          AEM(I) = -1.0                                                 ES12  83
      GO TO 500                                                         ES12  84
  400 CONTINUE                                                          ES12  85
      WRITE (8,90) ISIC(1),ISITE(1),ESH                                 ES12  86
   90 FORMAT('0**EST12B- SOURCE ',2I4,' EFF. STACK HEIGHT OF ',F6.2,' LESS12  87
     .S THAN MINIMUM TABLE VALUE, ALLOWABLE SET = EXISTING EMISSION.')  ES12  88
          AEM(1) = EXEM(IPOL,1)                                         ES12  89
          IERR = 1                                                      ES12  90
  500 CONTINUE                                                          ES12  91
      RETURN                                                            ES12  92
      END                                                               ES12  93
```

SUBPROGRAM EST13

PURPOSE

The subprogram EST13 determines a maximum allowable exhaust gas concentration for sulfur dioxide only. This volume is used to calculate an allowable mass emission rate.

CALLING SEQUENCE

CALL EST13

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

None

PROCEDURE

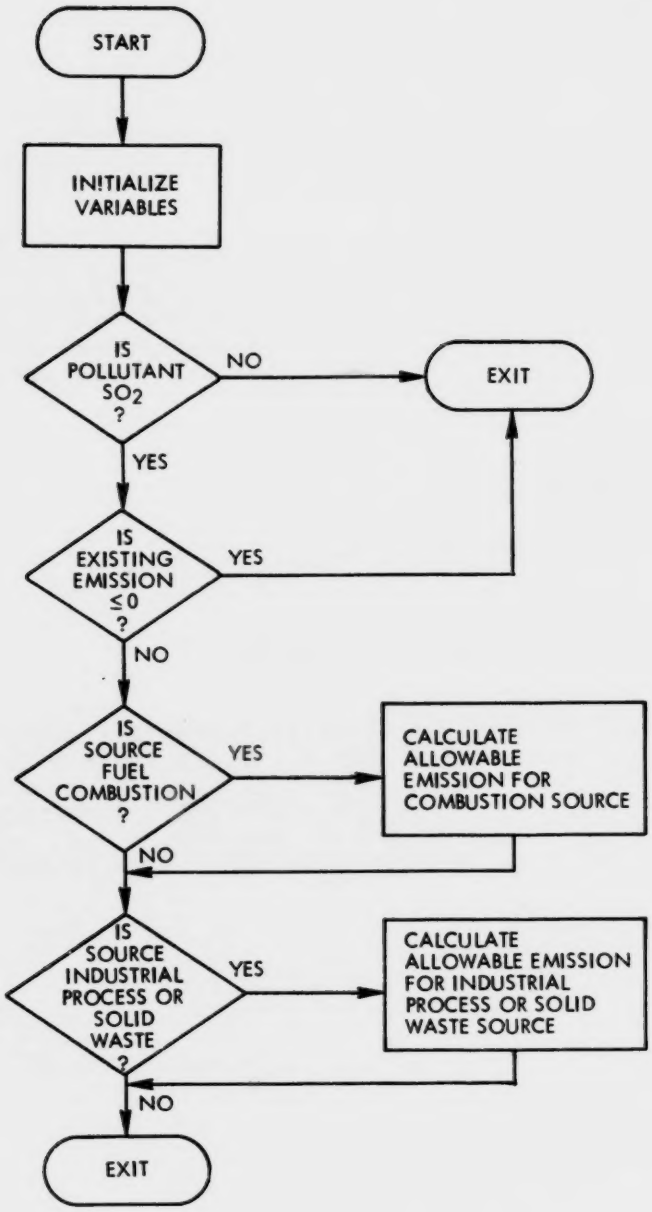
1. If pollutant is not SO_2 or existing emission is zero, exit.
2. Calculate allowable emission depending on type of source (i.e., fuel combustion, industrial process, or solid waste.)
3. Exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS POLLUTANT SO_2 ?
NO
EXIT
YES
IS EXISTING EMISSION ≤0 ?
YES
NO
IS SOURCE FUEL COMBUSTION ?
YES
CALCULATE ALLOWABLE EMISSION FOR COMBUSTION SOURCE
NO
IS SOURCE INDUSTRIAL PROCESS OR SOLID WASTE ?
YES
CALCULATE ALLOWABLE EMISSION FOR INDUSTRIAL PROCESS OR SOLID WASTE SOURCE
NO
EXIT

```
      SUBROUTINE EST13                                                      ES13   1
C                                                                           ES13   2
C   EXHAUST CONCENTRATION  STANDARD 13                                      ES13   3
C                                                                           ES13   4
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES13   5
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES13   6
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES13   7
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES13   8
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES13   9
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES13  10
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES13  11
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES13  12
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES13  13
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES13  14
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES13  15
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                            ES13  16
      INTEGER BEE/'B'/,PEE/'P'/,ESS/'S'/                                    ES13  17
C                                                                           ES13  18
          NREG = 0                                                          ES13  19
      IF (IPOL .NE.1) GO TO 500                                             ES13  20
C                                                                           ES13  21
      IF (EXEM(IPOL,1).LE.0.0) GO TO 500                                    ES13  22
C                                                                           ES13  23
          NREG = 13                                                         ES13  24
C                                                                           ES13  25
C  ALLOWABLE EMISSION FOR FUEL BURNING SOURCES                              ES13  26
C                                                                           ES13  27
      IF (ITYPE(1) .EQ. BEE)                                                ES13  28
     .    AEM(1) = 1.0275E-17 * TAB13(2,1,1) * (FRATE(1,1) * 150. +         ES13  29
     .    FRATE(2,1) * 148. + FRATE(3,1) * 146.  * FRATE(4,1) * 144.0)      ES13  30
C                                                                           ES13  31
C  ALLOWABLE EMISSION FOR INDUSTRIAL AND SOLID WASTE SOURCES                ES13  32
      IF (ITYPE(1) .EQ. PEE .OR. ITYPE(1) .EQ. ESS)                         ES13  33
     .    AEM(1) =11.694E-6 * TAB13(2,1,ICLASS) * GVOL(1) * SHIFT(1) /      ES13  34
     .              TEMP(1)                                                 ES13  35
  500 CONTINUE                                                              ES13  36
C                                                                           ES13  37
      RETURN                                                                ES13  38
      END                                                                   ES13  39
```

SUBPROGRAM EST14

PURPOSE

The subprogram EST14 determines a maximum allowable exhaust gas concentration for sulfur dioxide only. This volume is used to calculate an allowable mass emission rate.

CALLING SEQUENCE

CALL EST14

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18.

INPUT

None

OUTPUT

None

PROCEDURE

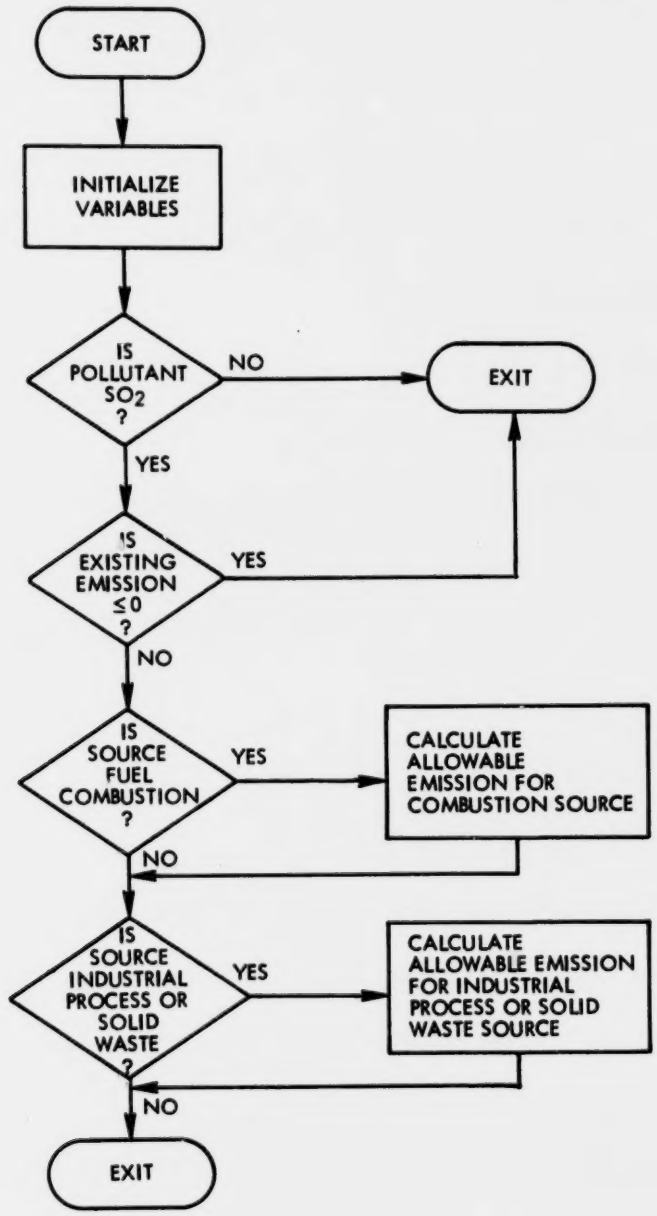
1. If pollutant is not SO_2 or existing emission is zero, exit.
2. Calculate allowable emission depending on type of source (i.e., fuel combustion, industrial process, or solid waste.)
3. Exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS POLLUTANT SO_2 ?
NO
EXIT
YES
IS EXISTING EMISSION ≤0 ?
YES
NO
IS SOURCE FUEL COMBUSTION ?
YES
CALCULATE ALLOWABLE EMISSION FOR COMBUSTION SOURCE
NO
IS SOURCE INDUSTRIAL PROCESS OR SOLID WASTE ?
YES
CALCULATE ALLOWABLE EMISSION FOR INDUSTRIAL PROCESS OR SOLID WASTE SOURCE
NO
EXIT

```
      SUBROUTINE EST14                                                      ES14   1
C                                                                           ES14   2
C   EXHAUST CONCENTPATION  STANDARD 14                                      ES14   3
C                                                                           ES14   4
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES14   5
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES14   6
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES14   7
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES14   8
     .FQTY(4,25),IGAS(25),FON(4)                                            ES14   9
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES14  10
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES14  11
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES14  12
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES14  13
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES14  14
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES14  15
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES14  16
      INTEGER BEE/'B'/,PEE/'P'/,ESS/'S'/                                    ES14  17
C                                                                           ES14  18
          NREG = 0                                                          ES14  19
      IF (IPOL .NE.1) GO TO 500                                             ES14  20
C                                                                           ES14  21
      IF (EXEM(IPOL,1).LE.0.0) GO TO 500                                    ES14  22
C                                                                           ES14  23
          NREG = 14                                                         ES14  24
C                                                                           ES14  25
C  ALLOWABLE EMISSION FOR FUEL BURNING SOURCES                              ES14  26
C                                                                           ES14  27
      IF (ITYPE(1) .EQ. BEE)                                                ES14  28
     .    AEM(1) = 1.0275E-17 * TAB14(2,1,1) * (FRATE(1,1) * 150. +         ES14  29
     .    FRATE(2,1) * 148. + FRATE(3,1) * 146.  * FRATE(4,1) * 144.0)      ES14  30
C                                                                           ES14  31
C  ALLOWABLE EMISSION FOR INDUSTRIAL AND SOLID WASTE SOURCES                ES14  32
      IF (ITYPE(1) .EQ. PEE .OR. ITYPE(1) .EQ. ESS)                         ES14  33
     .    AEM(1) =11.694E-6 * TAB14(2,1,ICLASS) * GVOL(1) * SHIFT(1) /      ES14  34
     .           TEMP(1)                                                    ES14  35
  500 CONTINUE                                                              ES14  36
C                                                                           ES14  37
      RETURN                                                                ES14  38
      END                                                                   ES14  39
```

NOT REPRODUCIBLE

SUBPROGRAM EST15

PURPOSE

The subprogram EST15 determines a maximum allowable concentration for particulate matter only. This volume is used to calculate the allowable mass emission rate.

CALLING SEQUENCE

CALL EST15

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

None

PROCEDURE

1. If pollutant is not particulate or existing emissions is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. Determine the weight for source.
4. Calculate allowable emission and exit.

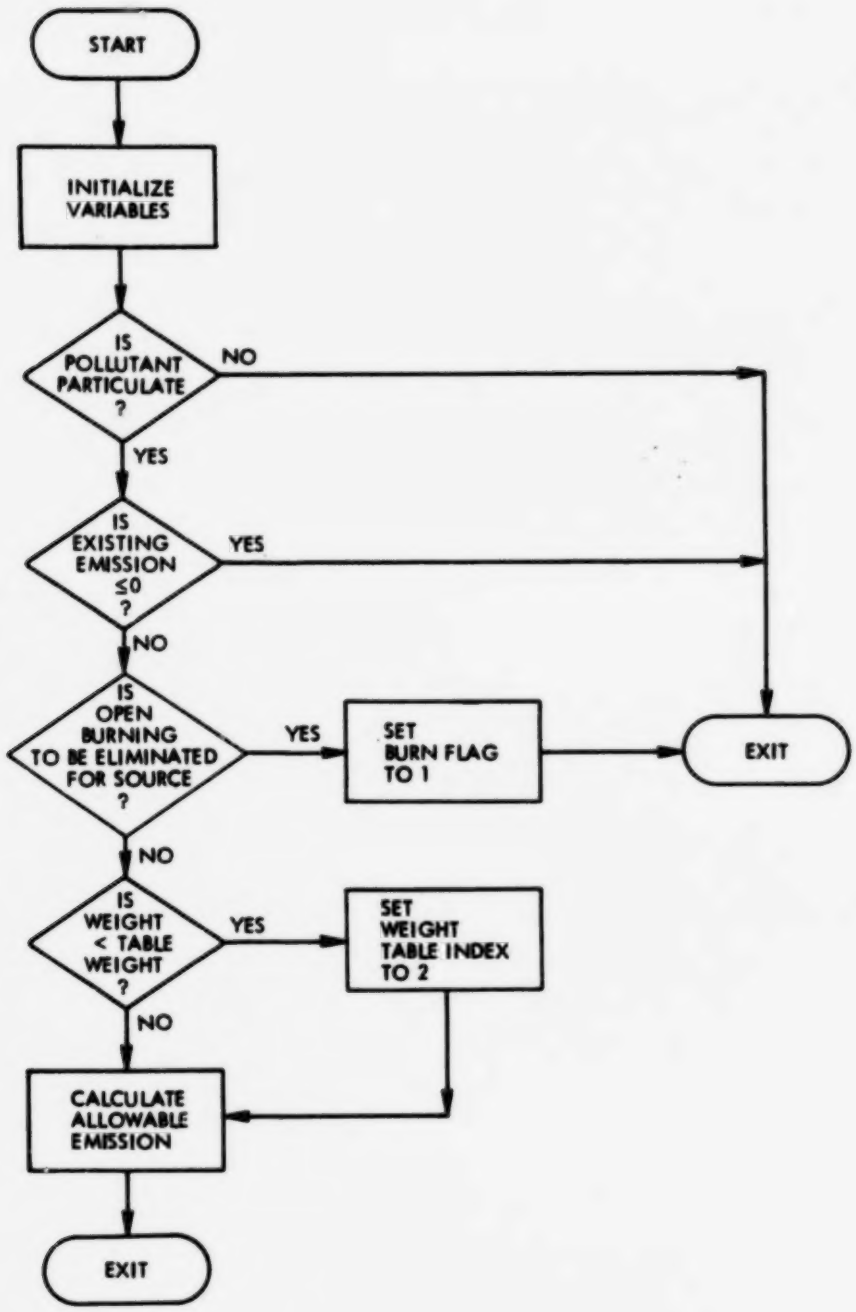
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.

BURN	Common block containing flag for elimination of open burning.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS POLLUTANT PARTICULATE ?
NO
YES
IS EXISTING EMISSION ≤0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
EXIT
NO
IS WEIGHT < TABLE WEIGHT ?
YES
SET WEIGHT TABLE INDEX TO 2
NO
CALCULATE ALLOWABLE EMISSION
EXIT

```
      SUBROUTINE EST15                                                      ES15   1
C                                                                           ES15   2
C  EXHAUST CONCENTRATION  STANDARD 15                                       ES15   3
C                                                                           ES15   4
      COMMON/BURN/        NOBNO2,NOBNO3,NOBNO4,NOBNO5,NOBNO6,NOBNO7,        ES15   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES15   6
     .             NOBN19,NOBN20                                            ES15   7
      COMMON /DVICE/           IERR,IREGON,IBURN                            ES15   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),CCSTI(25),EFF(2,25),AEM(25),         ES15   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES15  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES15  11
     .ATJ(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES15  12
     .FQTY(4,25),IGAS(25),FUN(4)                                            ES15  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES15  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES15  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(20,2,3),            ES15  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES15  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES15  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES15  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES15  20
C                                                                           ES15  21
          NREG = 0                                                          ES15  22
          KK = 4                                                            ES15  23
      IF(IPOL .NE. 2 .OR. ICLASS .EQ. 1) GO TO 500                          ES15  24
C                                                                           ES15  25
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 500                                  ES15  26
          NREG = 15                                                         ES15  27
C                                                                           ES15  28
C  NO OPEN BURNING SECTION                                                  ES15  29
      IF(NOBN15 .NE. 1) GO TO 100                                           ES15  30
      IF (ISIC(1) .NE. 4953) GO TO 100                                      ES15  31
      IP = MOD(ISITE(1),10)                                                 ES15  32
      IF (IP .NE. 2) GO TO 100                                              ES15  33
      IBURN = 1                                                             ES15  34
      GO TO 500                                                             ES15  35
  100 CONTINUE                                                              ES15  36
C                                                                           ES15  37
  200 CONTINUE                                                              ES15  38
C                                                                           ES15  39
      IF(PRATE(1) .LT. TAB15(3,IPOL,ICLASS)) KK = 2                         ES15  40
C                                                                           ES15  41
C COMPUTE ALLOWABLE EMISSION FOR SOURCE I.                                  ES15  42
C                                                                           ES15  43
          AEM(1) = PRATE(1) * TAB15(KK,IPOL,ICLASS) * 4.52E-5               ES15  44
,C                                                                          ES15  45
  500 CONTINUE                                                              ES15  46
C                                                                           ES15  47
      RETURN                                                                ES15  48
C                                                                           ES15  49
      END                                                                   ES15  50
```

NOT REPRODUCIBLE

SUBPROGRAM EST16

PURPOSE

The subprogram EST16 determines a maximum allowable concentration for particulate matter only. This volume is used to calculate an allowable mass emission rate.

CALLING SEQUENCE

CALL EST16

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

None

PROCEDURE

1. If pollutant is not particulate or existing emission is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. Calculate allowable emission depending on type of source (i.e., fuel combustion, industrial process or solid waste.)
4. Exit.

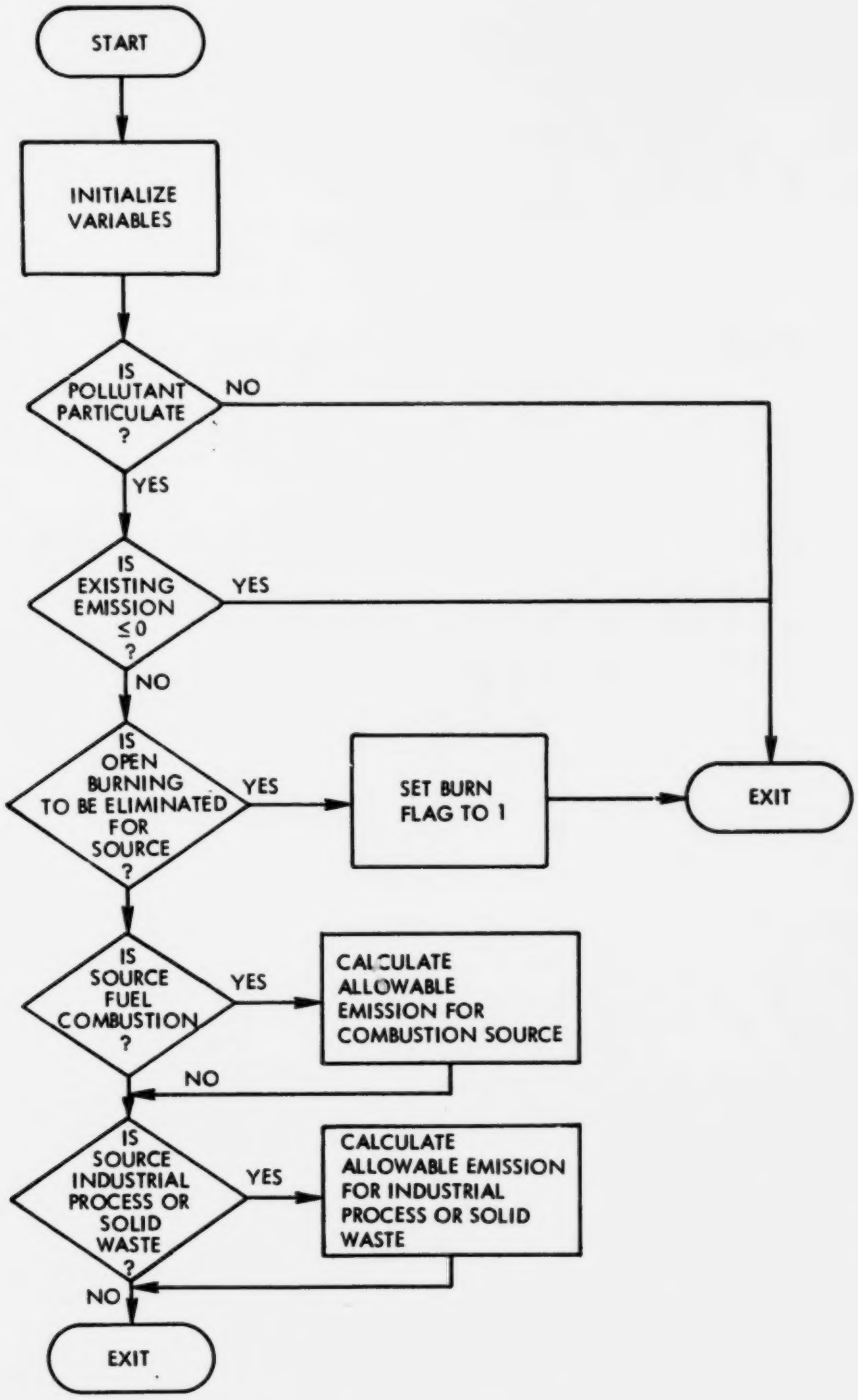
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.

BURN	Common block containing flag for elimination of open burning.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS POLLUTANT PARTICULATE ?
NO
YES
IS EXISTING EMISSION ≤0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
EXIT
IS SOURCE FUEL COMBUSTION ?
YES
CALCULATE ALLOWABLE EMISSION FOR COMBUSTION SOURCE
NO
IS SOURCE INDUSTRIAL PROCESS OR SOLID WASTE ?
YES
CALCULATE ALLOWABLE EMISSION FOR INDUSTRIAL PROCESS OR SOLID WASTE
NO
EXIT

NOT REPRODUCIBLE

```
      SUBROUTINE EST16                                                      ES16   1
C                                                                           ES16   2
C   EXHAUST CONCENTRATION  STANDARD 16                                      ES16   3
C                                                                           ES16   4
      COMMON/RUPN/        NOBNO2,NOBNO3,NOBNO4,NOBNO5,NOBNO6,NORNO7,        ES16   5
     .             NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES16   6
     .             NOBN19,NOBN20                                            ES16   7
      COMMON /DVICE/           IERR,IPEGON,IBURN                            ES16   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES16   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES16  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES16  11
     .BTU(25),EFFN(2),ISPC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES16  12
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES16  13
      COMMON/TABS/TABC1(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES16  14
     . TAB05(11,2,3),TAB06(11,2,3),TABC7(11,2,3),TAB08( 9,2,3),            ES16  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES16  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES16  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES16  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES16  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                            ES16  20
      INTEGER BEE/'B'/,PEE/'P'/,ESS/'S'/                                    ES16  21
          NREG = 0                                                          ES16  22
      IF (IPOL .NE.2) GO TO 500                                             ES16  23
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 500                                  ES16  24
          NREG = 16                                                         ES16  25
C                                                                           ES16  26
C  NO OPEN BURNING SECTION                                                  ES16  27
C                                                                           ES16  28
      IF(NOBN16 .NE. 1) GO TO 100                                           ES16  29
      IF (ISIC(1) .NE. 4953) GO TO 100                                      ES16  30
      IP = MOD(ISITE(1),10)                                                 ES16  31
      IF (IP .NE. 2) GO TO 100                                              ES16  32
      IBURN = 1                                                             ES16  33
      GO TO 500                                                             ES16  34
  100 CONTINUE                                                              ES16  35
C                                                                           ES16  36
C  ALLOWABLE EMISSION FOR FUEL BURNING SOURCES                              ES16  37
C                                                                           ES16  38
      IF (ITYPE(1) .EQ. BEE)                                                ES16  39
     .    AEM(1) = 4.5616E-14 * TAB16(2,2,1) * (FRATE(1,1) * 150. +        ES16  40
     .    FRATE(2,1) * 148. + FRATE(3,1) * 146.  * FRATE(4,1) * 144.0)      ES16  41
C                                                                           ES16  42
C  ALLOWABLE EMISSION FOR INDUSTRIAL AND SOLID WASTE SOURCES                ES16  43
C                                                                           ES16  44
      IF (ITYPE(1) .EQ. PEE .OR. ITYPE(1) .EQ. ESS)                         ES16  45
     .    AEM(1) = 1.005E-2 * TAB16(2,2,ICLASS) * GVOL(1) * SHIFT(1) /      ES16  46
     .             TEMP(1)                                                  ES16  47
C                                                                           ES16  48
  500 CONTINUE                                                              ES16  49
      RETURN                                                                ES16  50
      END                                                                   ES16  51
```

SUBPROGRAM EST17

PURPOSE

The subprogram EST17 determines the allowable exhaust gas concentration for particulate matter only. This volume is used to calculate an allowable emission.

CALLING SEQUENCE

CALL EST17

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

None

PROCEDURE

1. If pollutant is not particulate or existing emission is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. Calculate allowable emission depending on type of source (i.e., fuel combustion, industrial process, or solid waste.)
4. Exit.

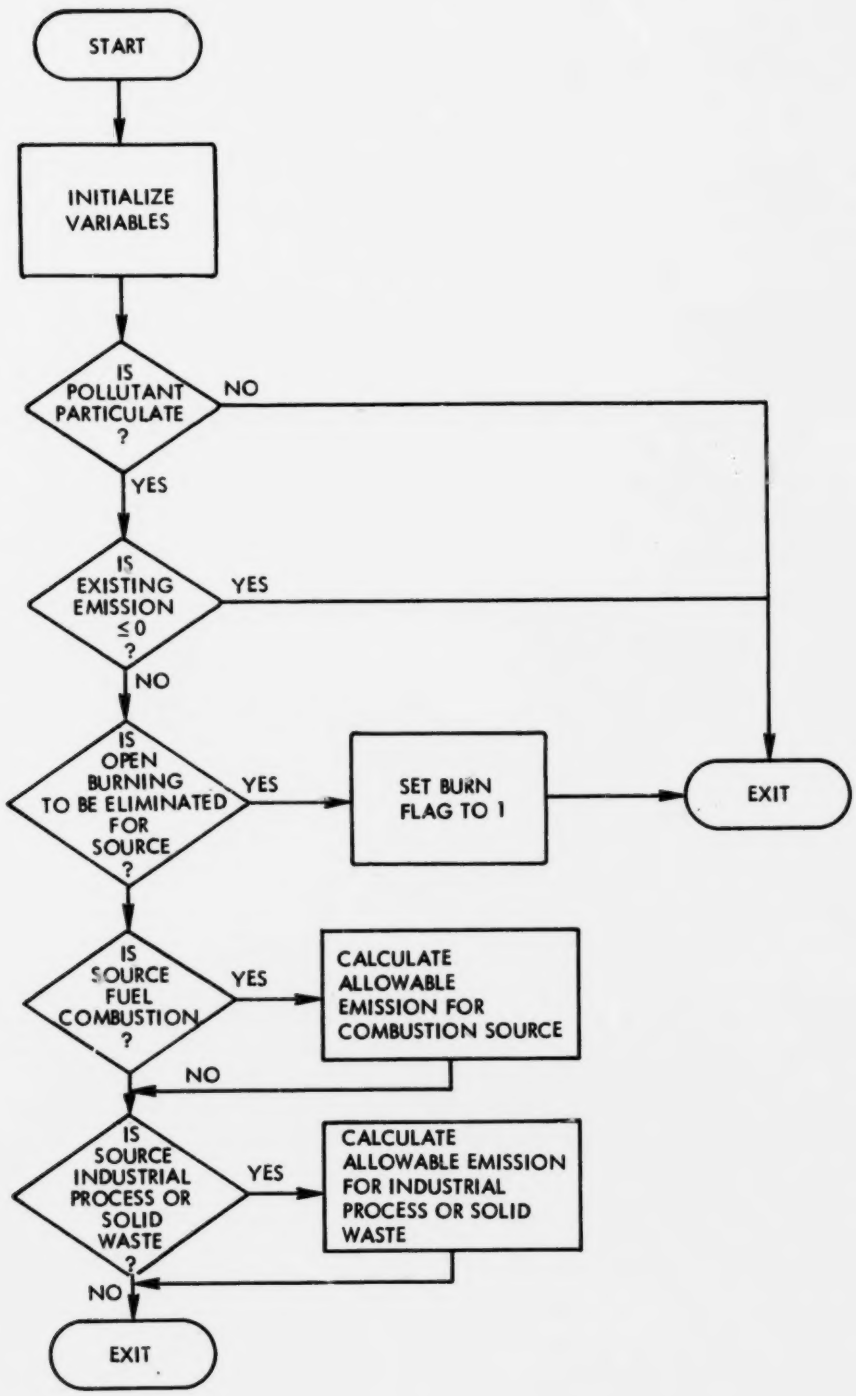
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.

BURN	Common block containing flag for each elimination of open burning.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS POLLUTANT PARTICULATE ?
NO
YES
IS EXISTING EMISSION ≤ 0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
YES
SET BURN FLAG TO 1
EXIT
IS SOURCE FUEL COMBUSTION ?
YES
CALCULATE ALLOWABLE EMISSION FOR COMBUSTION SOURCE
NO
IS SOURCE INDUSTRIAL PROCESS OR SOLID WASTE ?
YES
CALCULATE ALLOWABLE EMISSION FOR INDUSTRIAL PROCESS OR SOLID WASTE
NO
EXIT

```
      SUBROUTINE EST17                                                      ES17   1
C                                                                           ES17   2
C   EXHAUST CONCENTRATION  STANDARD 17                                      ES17   3
C                                                                           ES17   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,       ES17   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES17   6
     .            NOBN19,NOBN20                                            ES17   7
      COMMON /DVICE/          IEPR,IREGON,IBURN                           ES17   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),       ES17   9
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),  ES17  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES17  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES17  12
     .FQTY(4,25),IGAS(25),FJN(4)                                          ES17  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES17  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),          ES17  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),          ES17  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),          ES17  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),          ES17  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),          ES17  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                          ES17  20
      INTEGER BEE/'B'/,PEE/'P'/,ESS/'S'/                                  ES17  21
C                                                                         ES17  22
          NREG = 0                                                        ES17  23
      IF (IPOL .NE.2) GO TO 500                                           ES17  24
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 500                                ES17  25
          NREG = 17                                                       ES17  26
C                                                                         ES17  27
C  NO OPEN BURNING SECTION                                                ES17  28
      IF(NOBN17 .NE. 1) GO TO 100                                         ES17  29
      IF (ISIC(1) .NE. 4953) GO TO 100                                    ES17  30
      IP = MOD(ISITE(1),10)                                               ES17  31
      IF (IP .NE. 2) GO TO 100                                            ES17  32
      IBURN = 1                                                           ES17  33
      GO TO 500                                                           ES17  34
  100 CONTINUE                                                            ES17  35
C                                                                         ES17  36
C  ALLOWABLE EMISSION FOR FUEL BURNING SOURCES                            ES17  37
C                                                                         ES17  38
      IF (ITYPE(1) .EQ. BEE)                                              ES17  39
     .    AEM(1) = 2.0275E-14 * TAB17(2,2,1) * (FRATE(1,1) * 150. +       ES17  40
     .    FRATE(2,1) * 148. + FRATE(3,1) * 146.  * FRATE(4,1) * 144.0)    ES17  41
C                                                                         ES17  42
C  ALLOWABLE EMISSION FOR INDUSTRIAL AND SOLID WASTE SOURCES              ES17  43
C                                                                         ES17  44
      IF (ITYPE(1) .EQ. PEE .OR. ITYPE(1) .EQ. ESS)                       ES17  45
     .    AEM(1) = 1.800E-5 * TAB17(2,2,ICLASS) * GVOL(1) * SHIFT(1) /    ES17  46
     .             TEMP(1)                                                ES17  47
C                                                                         ES17  48
  500 CONTINUE                                                            ES17  49
C                                                                         ES17  50
      RETURN                                                              ES17  51
      END                                                                 ES17  52
```

SUBPROGRAM EST18

PURPOSE

The subprogram EST18 calculates the allowable emissions based on the weight of the materials processed.

CALLING SEQUENCE

CALL EST18

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If source is fuel combustion or existing emission is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. If process weight is in range of graph,calculate allowable emission and exit.
4. If process weight cannot fit graph, write error and exit.

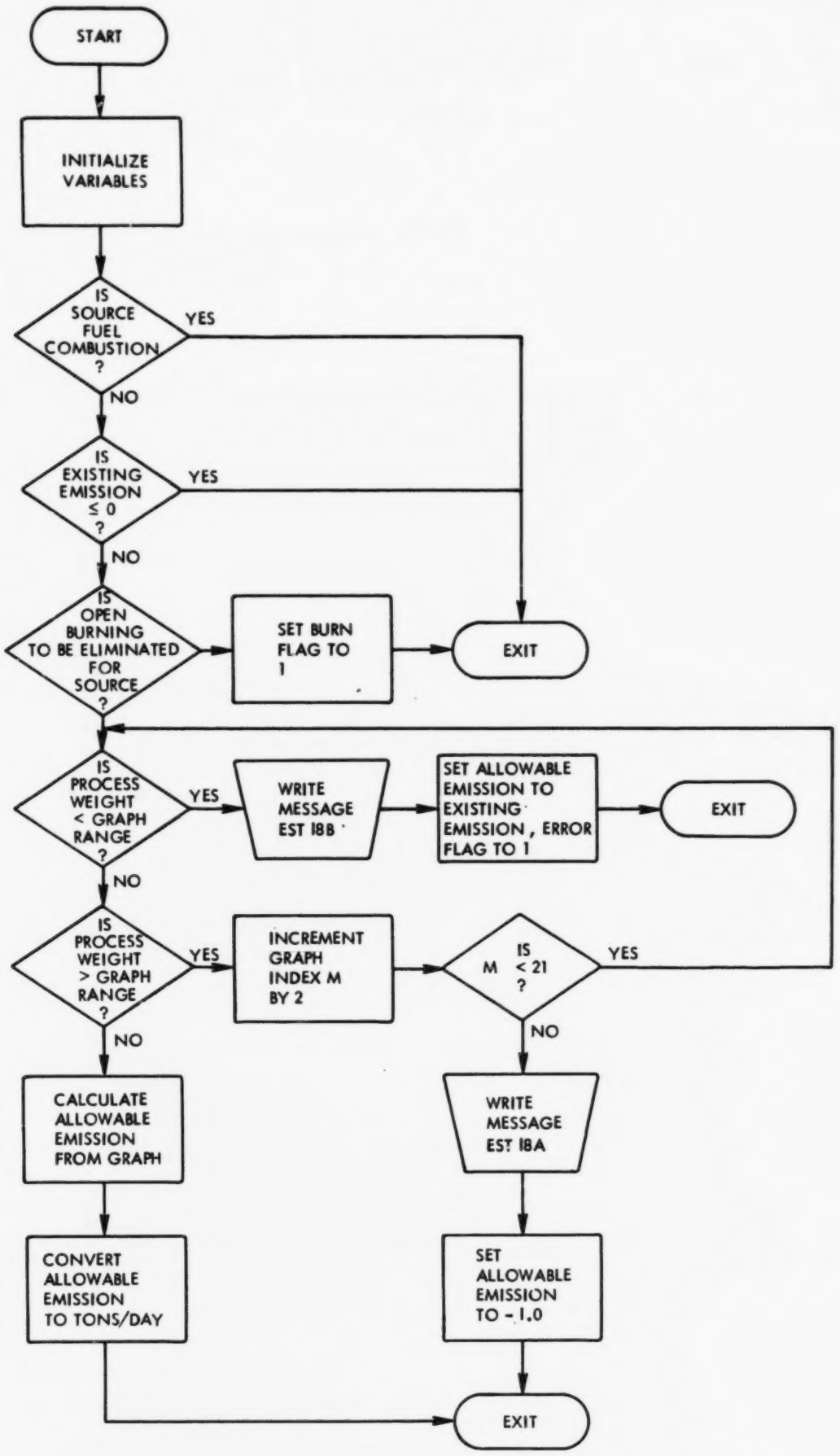
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

BURN	Common block containing flags for elimination of open burning.
D'ICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS SOURCE FUEL COMBUSTION ?
YES
NO
IS EXISTING EMISSION ≤ 0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
SET BURN FLAG TO 1
EXIT
IS PROCESS WEIGHT < GRAPH RANGE ?
YES
WRITE MESSAGE EST 18B
SET ALLOWABLE EMISSION TO EXISTING EMISSION, ERROR FLAG TO 1
EXIT
NO
IS PROCESS WEIGHT > GRAPH RANGE ?
YES
INCREMENT GRAPH INDEX M BY 2
IS M < 21 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION FROM GRAPH
WRITE MESSAGE EST 18A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST18                                                      ES18   1
C                                                                           ES18   2
C  PROCESS WEIGHT  STANDARD 18                                             ES18   3
C                                                                           ES18   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,       ES18   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                      ES18   6
     .            NOBN19,NOBN20                                            ES18   7
      COMMON /DVICE/          IERR,IREGON,IBURN                           ES18   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),       ES18   9
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25), ES18  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES18  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES18  12
     .FQTY(4,25),IGAS(25),FQN(4)                                          ES18  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES18  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),          ES18  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),          ES18  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),          ES18  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),          ES18  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),          ES18  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                         ES18  20
C                                                                           ES18  21
          NREG = 0                                                        ES18  22
C                                                                           ES18  23
      IF (ICLASS .EQ. 1) GO TO 500                                        ES18  24
C                                                                           ES18  25
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 250                                ES18  26
          NREG = 18                                                       ES18  27
C  NO OPEN BURNING SECTION                                                  ES18  28
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 110                        ES18  29
      IF(NOBN18 .NE. 1) GO TO 110                                         ES18  30
      IF (ISIC(1) .NE. 4953) GO TO 110                                    ES18  31
      IP = MOD(ISITE(1),10)                                               ES18  32
      IF (IP .NE. 2) GO TO 110                                            ES18  33
          IBURN = 1                                                       ES18  34
      GO TO 500                                                           ES18  35
C                                                                           ES18  36
  110 CONTINUE                                                            ES18  37
          M = 2                                                           ES18  38
  200 CONTINUE                                                            ES18  39
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                 ES18  40
C                                                                           ES18  41
      IF (PRATE(1) .LT. TAB18(M,IPOL,ICLASS)) GO TO 400                   ES18  42
C                                                                           ES18  43
      IF (PRATE(1) .GT. TAB18(M+2,IPOL,ICLASS)) GO TO 300                 ES18  44
C                                                                           ES18  45
C CALCULATE ALLOWABLE EMISSION (Y-AXIS:LBS/HOUR)     FROM GRAPH (Y=MX+B)  ES18  46
C                                                                           ES18  47
          YLOG = (ALOG10(TAB18(M+3,IPOL,ICLASS)) -                        ES18  48
     .             ALOG10(TAB18(M+1,IPOL,ICLASS)))  /                     ES18  49
     .           (ALOG10(TAB18(M+2,IPOL,ICLASS)) -                        ES18  50
     .            ALOG10(TAB18(M,IPOL,ICLASS))) *                         ES18  51
     .           (ALOG10(PRATE(1)) - ALOG10(TAB18(M,IPOL,ICLASS))) +      ES18  52
     .            ALOG10(TAB18(M+1,IPOL,ICLASS))                         ES18  53
          Y = 10. **YLOG                                                  ES18  54
```

```
C                                                                       ES18  55
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES18  56
C                                                                       ES18  57
          AEM(1) = .004 * Y * SHIFT(1)                                  ES18  58
  250 CONTINUE                                                          ES18  59
      GO TO 500                                                         ES18  60
  300 CONTINUE                                                          ES18  61
      M = M + 2                                                         ES18  62
      IF (M .LT. 21) GO TO 200                                          ES18  63
      WRITE (8,91) ISIC(1),ISITE(1),PRATE(1)                            ES18  64
   91 FORMAT('0**EST18A- SOURCE ',2I4,' PROCESS WEIGHT OF ',F10.0,' EXCEES18  65
     .EDS TABLE LIMIT- STANDARD CANNOT BE APPLIED.')                    ES18  66
          AEM(1) = -1.0                                                 ES18  67
      GO TO 500                                                         ES18  68
  400 CONTINUE                                                          ES18  69
      WRITE (8,90) ISIC(1),ISITE(1),PRATE(1)                            ES18  70
   90 FORMAT('0**EST18B- SOURCE ',2I4,' PROCESS WEIGHT ',F6.2,' LESS THAES18  71
     .N MINIMUM TABLE VALUE- ALLOWABLE SET = EXISTING EMISSION.')       ES18  72
          AEM(1) = EXEM(IPOL,1)                                         ES18  73
          IERR = 1                                                      ES18  74
  500 CONTINUE                                                          ES18  75
      RETURN                                                            ES18  76
      END                                                               ES18  77
```

SUBPROGRAM EST19

PURPOSE

The subprogram EST19 calculates the allowable emissions based on the weight of the material processed.

CALLING SEQUENCE

CALL EST19

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If source is fuel combustion or existing emission is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. If process weight is in range of graph, calculate allowable emission and exit.
4. If process weight cannot fit graph, write error and exit.

SUBROUTINES

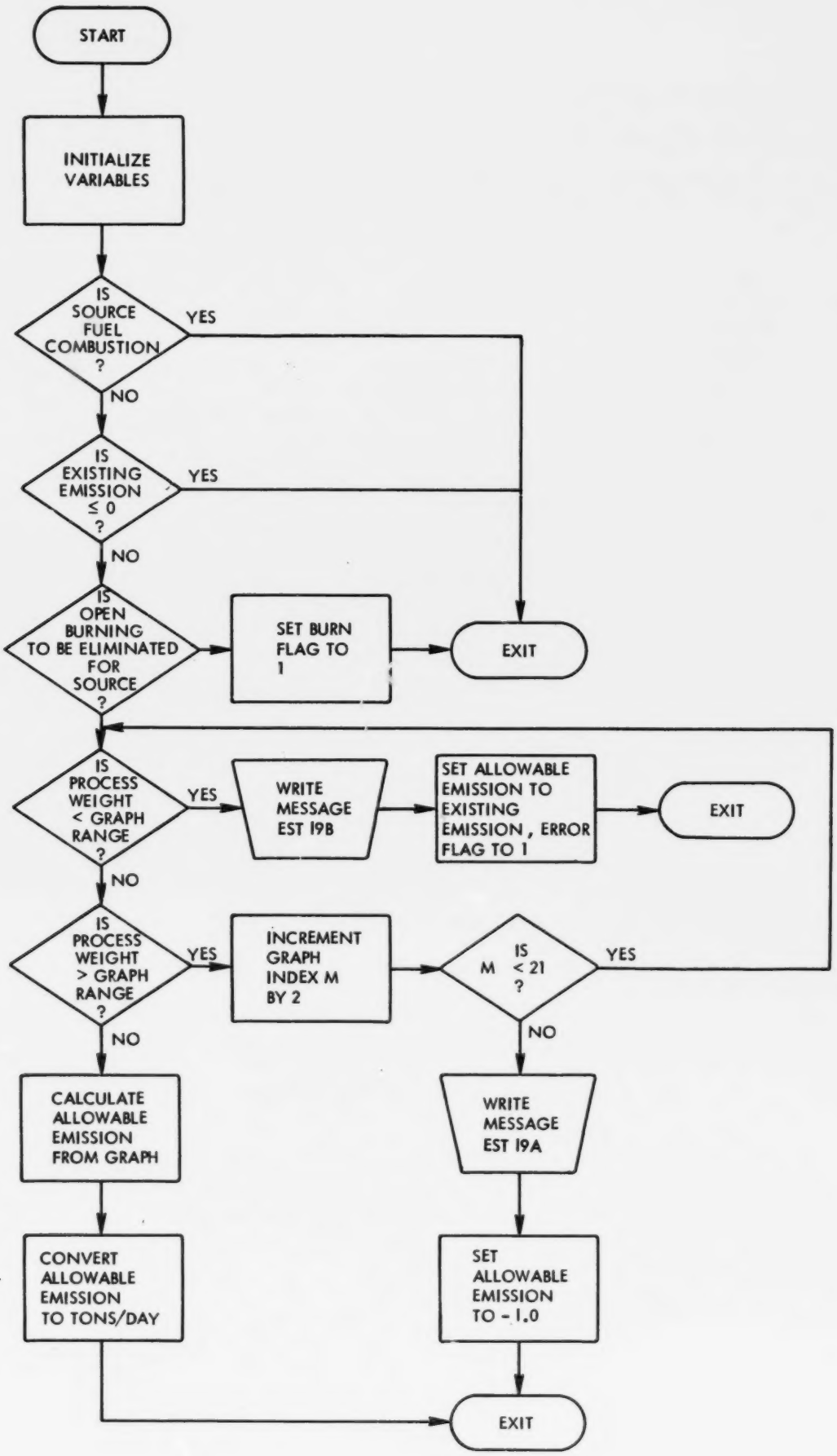
None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.
BURN	Common block containing flags for elimination of open burning.

DVICE Common block containing flags for internal program functions.

TABS Common block containing emission standards inputs.


START
INITIALIZE VARIABLES
IS SOURCE FUEL COMBUSTION ?
YES
NO
IS EXISTING EMISSION ≤ 0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
SET BURN FLAG TO 1
EXIT
IS PROCESS WEIGHT < GRAPH RANGE ?
YES
WRITE MESSAGE EST 19B
SET ALLOWABLE EMISSION TO EXISTING EMISSION , ERROR FLAG TO 1
EXIT
NO
IS PROCESS WEIGHT > GRAPH RANGE ?
YES
INCREMENT GRAPH INDEX M BY 2
IS M < 21 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION FROM GRAPH
WRITE MESSAGE EST 19A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO - 1.0
EXIT

```
      SUBROUTINE EST19                                                      ES19   1
C                                                                           ES19   2
C  PROCESS WEIGHT  STANDARD 19                                              ES19   3
C                                                                           ES19   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,         ES19   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                       ES19   6
     .            NOBN19,NOBN20                                             ES19   7
      COMMON /DVICE/          IERR,IREGON,IBURN                             ES19   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES19   9
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES19  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES19  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES19  12
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES19  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES19  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES19  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES19  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES19  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES19  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES19  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES19  20
C                                                                           ES19  21
          NREG = 0                                                          ES19  22
C                                                                           ES19  23
      IF (ICLASS .EQ. 1) GO TO 500                                          ES19  24
C                                                                           ES19  25
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 250                                  ES19  26
          NREG = 19                                                         ES19  27
C  NO OPEN BURNING SECTION                                                  ES19  28
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 110                          ES19  29
      IF(NOBN18 .NE. 1) GO TO 110                                           ES19  30
      IF (ISIC(1) .NE. 4953) GO TO 110                                      ES19  31
      IP = MOD(ISITE(1),10)                                                 ES19  32
      IF (IP .NE. 2) GO TO 110                                              ES19  33
          IBURN = 1                                                         ES19  34
      GO TO 500                                                             ES19  35
C                                                                           ES19  36
  110 CONTINUE                                                              ES19  37
          M = 2                                                             ES19  38
  200 CONTINUE                                                              ES19  39
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES19  40
C                                                                           ES19  41
      IF (PRATE(1) .LT. TAB19(M,IPOL,ICLASS)) GO TO 400                     ES19  42
C                                                                           ES19  43
      IF (PRATE(1) .GT. TAB19(M+2,IPOL,ICLASS)) GO TO 300                   ES19  44
C                                                                           ES19  45
C CALCULATE ALLOWABLE EMISSION (Y-AXIS;LBS/HOUR)     FROM GRAPH (Y=MX+B)    ES19  46
C                                                                           ES19  47
          YLOG = (ALOG10(TAB19(M+3,IPOL,ICLASS)) -                          ES19  48
     .             ALOG10(TAB19(M+1,IPOL,ICLASS)))  /                       ES19  49
     .           (ALOG10(TAB19(M+2,IPOL,ICLASS)) -                          ES19  50
     .            ALOG10(TAB19(M,IPOL,ICLASS))) *                           ES19  51
     .           (ALOG10(PRATE(1)) - ALOG10(TAB19(M,IPOL,ICLASS))) +       ES19  52
     .            ALOG10(TAB19(M+1,IPOL,ICLASS))                            ES19  53
          Y = 10. **YLOG                                                    ES19  54
```

```
C                                                                       ES19  55
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES19  56
C                                                                       ES19  57
          AEM(1) = .004 * Y * SHIFT(1)                                  ES19  58
  250 CONTINUE                                                          ES19  59
      GO TO 500                                                         ES19  60
  300 CONTINUE                                                          ES19  61
      M = M + 2                                                         ES19  62
      IF (M .LT. 21) GO TO 200                                          ES19  63
      WRITE (8,91) ISIC(1),ISITE(1),PRATE(1)                            ES19  64
   91 FORMAT('0**EST19A- SOURCE ',2I4,' PROCESS WEIGHT OF ',F10.0,' EXCEES19  65
     .EDS TABLE LIMIT- STANDARD CANNOT BE APPLIED.')                    ES19  66
          AEM(1) = -1.0                                                 ES19  67
      GO TO 500                                                         ES19  68
  400 CONTINUE                                                          ES19  69
      WRITE (8,90) ISIC(1),ISITE(1),PRATE(1)                            ES19  70
   90 FORMAT('0**EST19B- SOURCE ',2I4,' PROCESS WEIGHT ',F6.2,' LESS THAES19  71
     .N MINIMUM TABLE VALUE- ALLOWABLE SET = EXISTING EMISSION.')       ES19  72
          AEM(1) = EXEM(IPOL,1)                                         ES19  73
          IERR = 1                                                      ES19  74
  500 CONTINUE                                                          ES19  75
      RETURN                                                            ES19  76
      END                                                               ES19  77
```

SUBPROGRAM EST20

PURPOSE

The subprogram EST20 calculates the allowable emissions based on the weight of the material processed.

CALLING SEQUENCE

CALL EST20

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Regulations Error File (TAPE)

PROCEDURE

1. If source is fuel combustion or existing emission is zero, exit.
2. If open burning is to be eliminated, set burn flag and exit.
3. If process weight is in range of graph, calculate allowable emission and exit.
4. If process weight cannot fit graph, write error and exit.

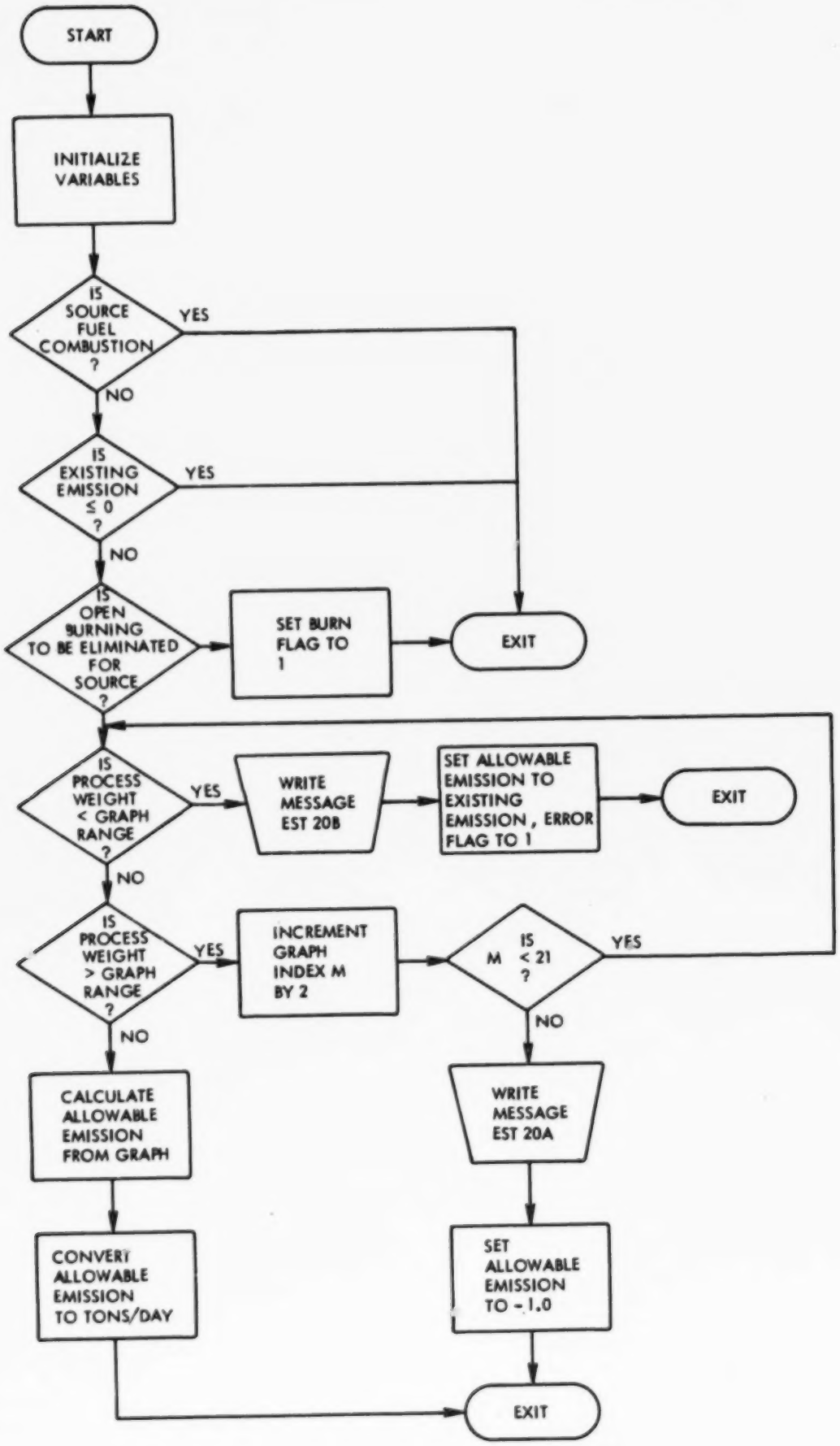
SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.

BURN	Common block containing flag for elimination of open burning.
DVICE	Common block containing flags for internal program functions.
TABS	Common block containing emission standard inputs.


START
INITIALIZE VARIABLES
IS SOURCE FUEL COMBUSTION ?
YES
NO
IS EXISTING EMISSION ≤ 0 ?
YES
NO
IS OPEN BURNING TO BE ELIMINATED FOR SOURCE ?
SET BURN FLAG TO 1
EXIT
IS PROCESS WEIGHT < GRAPH RANGE ?
YES
WRITE MESSAGE EST 20B
SET ALLOWABLE EMISSION TO EXISTING EMISSION , ERROR FLAG TO 1
EXIT
NO
IS PROCESS WEIGHT > GRAPH RANGE ?
YES
INCREMENT GRAPH INDEX M BY 2
IS M < 21 ?
YES
NO
NO
CALCULATE ALLOWABLE EMISSION FROM GRAPH
WRITE MESSAGE EST 20A
CONVERT ALLOWABLE EMISSION TO TONS/DAY
SET ALLOWABLE EMISSION TO -1.0
EXIT

```
      SUBROUTINE EST20                                                      ES20   1
C                                                                           ES20   2
C  PROCESS WEIGHT  STANDARD 20                                              ES20   3
C                                                                           ES20   4
      COMMON/BURN/       NOBN02,NOBN03,NOBN04,NOBN05,NOBN06,NOBN07,         ES20   5
     .            NOBN12,NOBN15,NOBN16,NOBN17,NOBN18,                       ES20   6
     .            NOBN19,NOBN20                                             ES20   7
      COMMON /DVICE/           IERR,IREGON,IBURN                            ES20   8
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),         ES20   9
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),    ES20  10
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES20  11
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES20  12
     .FQTY(4,25),IGAS(25),FQN(4)                                            ES20  13
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES20  14
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES20  15
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES20  16
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES20  17
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES20  18
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES20  19
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                           ES20  20
C                                                                           ES20  21
          NREG = 0                                                          ES20  22
C                                                                           ES20  23
      IF (ICLASS .EQ. 1) GO TO 500                                          ES20  24
C                                                                           ES20  25
      IF (EXEM(IPOL,1) .LE. 0.0) GO TO 250                                  ES20  26
          NREG = 20                                                         ES20  27
C  NO OPEN BURNING SECTION                                                  ES20  28
      IF(IPOL .NE. 2 .OR. ICLASS .NE. 3) GO TO 110                          ES20  29
      IF(NOBN18 .NE. 1) GO TO 110                                           ES20  30
      IF (ISIC(1) .NE. 4953) GO TO 110                                      ES20  31
      IP = MOD(ISITE(1),10)                                                 ES20  32
      IF (IP .NE. 2) GO TO 110                                              ES20  33
          IBURN = 1                                                         ES20  34
      GO TO 500                                                             ES20  35
C                                                                           ES20  36
  110 CONTINUE                                                              ES20  37
          M = 2                                                             ES20  38
  200 CONTINUE                                                              ES20  39
C DETERMINE GRAPH INTERVAL FOR THE SOURCE                                   ES20  40
C                                                                           ES20  41
      IF (PRATE(1) .LT. TAB20(M,IPOL,ICLASS)) GO TO 400                     ES20  42
C                                                                           ES20  43
      IF (PRATE(1) .GT. TAB20(M+2,IPOL,ICLASS)) GO TO 300                   ES20  44
C                                                                           ES20  45
C CALCULATE ALLOWABLE EMISSION (Y-AXIS:LBS/HOUR)     FROM GRAPH (Y=MX+B)    ES20  46
C                                                                           ES20  47
          YLOG = (ALOG10(TAB20(M+3,IPOL,ICLASS)) -                          ES20  48
     .            ALOG10(TAB20(M+1,IPOL,ICLASS)))  /                        ES20  49
     .           (ALOG10(TAB20(M+2,IPOL,ICLASS)) -                          ES20  50
     .            ALOG10(TAB20(M,IPOL,ICLASS))) *                           ES20  51
     .           (ALOG10(PRATE(1)) - ALOG10(TAB20(M,IPOL,ICLASS))) +       ES20  52
     .            ALOG10(TAB20(M+1,IPOL,ICLASS))                            ES20  53
          Y = 10. **YLOG                                                    ES20  54
```

```
C                                                                       ES20  55
C CONVERT ALLOWABLE EMISSION TO TONS PER DAY.                           ES20  56
C                                                                       ES20  57
          AEM(1) = .004 * Y * SHIFT(1)                                  ES20  58
  250 CONTINUE                                                          ES20  59
      GO TO 500                                                         ES20  60
  300 CONTINUE                                                          ES20  61
      M = M + 2                                                         ES20  62
      IF (M .LT. 21) GO TO 200                                          ES20  63
      WRITE (8,91) ISIC(1),ISITE(1),PRATE(1)                            ES20  64
   91 FORMAT('0**EST20A- SOURCE ',2I4,' PROCESS WEIGHT OF ',F10.0,' EXCEES20  65
     .EDS TABLE LIMIT- STANDARD CANNOT BE APPLIED.')                    ES20  66
          AEM(1) = -1.0                                                 ES20  67
      GO TO 500                                                         ES20  68
  400 CONTINUE                                                          ES20  69
      WRITE (8,90) ISIC(1),ISITE(1),PRATE(1)                            ES20  70
   90 FORMAT('0**EST20B- SOURCE ',2I4,' PROCESS WEIGHT ',F6.2,' LESS THAES2C  71
     .N MINIMUM TABLE VALUE- ALLOWABLE SET = EXISTING EMISSION.')       ES20  72
          AEM(1) = EXEM(IPOL,1)                                         ES20  73
          IERR = 1                                                      ES20  74
  500 CONTINUE                                                          ES20  75
      RETURN                                                            ES20  76
      END                                                               ES20  77
```

SUBPROGRAM EST21

PURPOSE

The subprogram EST21 determines which types of fuels may be burned. This standard is applicable to particulate control of fuel combustion sources only.

CALLING SEQUENCE

CALL EST21

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

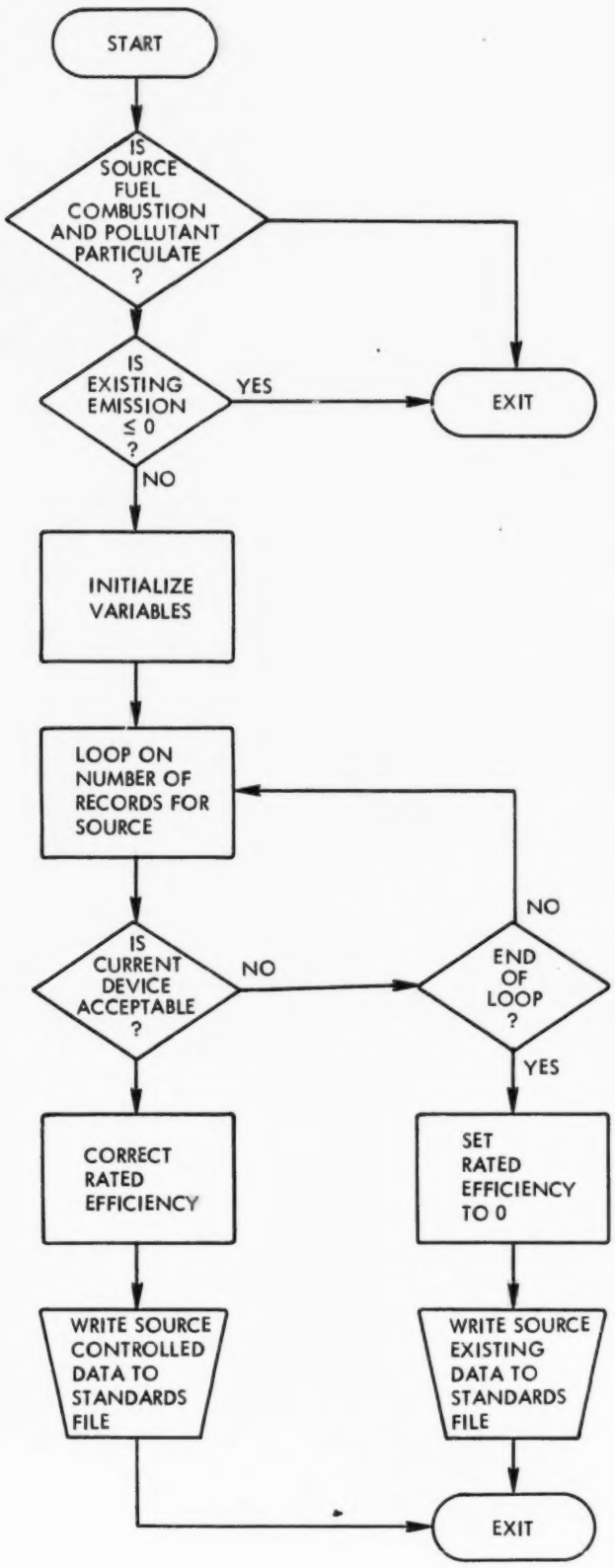
1. If source is not fuel combustion, the pollutant is not particulate or the emission is zero, exit.
2. If the control device is acceptable for the standard, calculate the rated efficiency, output the controlled source to the Emission Standards File and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emissions Standards File, and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT PARTICULATE ?
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST21                                                      ES21   1
C     FUEL ELIMINATION STANDARD 21                                           ES21   2
C                                                                            ES21   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),          ES21   4
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),   ES21   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES21   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES21   7
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                               ES21   8
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES21   9
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES21  10
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES21  11
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES21  12
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES21  13
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES21  14
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                            ES21  15
      DIMENSION IDEV(3)                                                      ES21  16
      DATA IDEV/27,28,29/                                                    ES21  17
C                                                                            ES21  18
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 2) GO TO 500                          ES21  19
C                                                                            ES21  20
      IF (EXEM(2,1) .LE. 0.0) GO TO 500                                      ES21  21
C                                                                            ES21  22
          IFLAG = 0                                                          ES21  23
          NREG  = 21                                                         ES21  24
          IFS   = TAB21(2,2,1)                                               ES21  25
C                                                                            ES21  26
      DO 400 LL=1,ISRC                                                       ES21  27
      IF (ICID(LL) .NE. IDEV(IFS)) GO TO 400                                 ES21  28
          AEMN = EXEM(2,LL) * (1. - EFF(2,LL))                               ES21  29
          REFF = (PEMN - AEMN) / PEMN                                        ES21  30
      WRITE(20)NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL),       ES21  31
     .         EFF(2,LL),AEMN,   EXEM(2,LL),REFF,(FQTY(N,LL),N=1,4),       ES21  32
     .         IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG                       ES21  33
      GO TO 500                                                              ES21  34
  400 CONTINUE                                                               ES21  35
C     DEVICE NOT AVAILABLE USE EXISTING CONDITIONS.                          ES21  36
      REFF = 0.0                                                             ES21  37
      WRITE(20)NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),            ES21  38
     .         EFF(2,1),AEM(1),EXEM(2,1),REFF,(FQTY(N,1),N=1,4),             ES21  39
     .         IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG                         ES21  40
  500 CONTINUE                                                               ES21  41
      RETURN                                                                 ES21  42
      END                                                                    ES21  43
```

SUBPROGRAM EST22

PURPOSE

The subprogram EST22 determines which types of fuel may be burned. This standard is applicable to particulate control of fuel combustion sources only.

CALLING SEQUENCE

CALL EST22

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

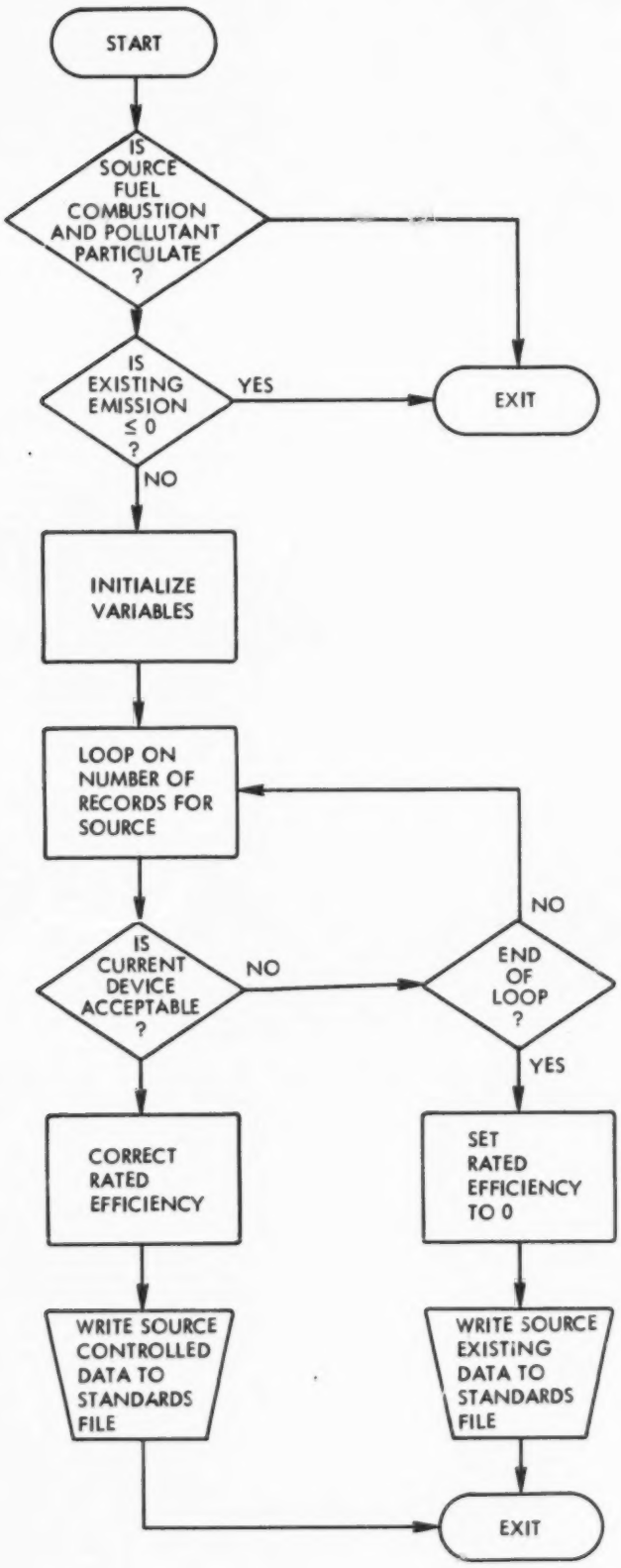
1. If the source is not fuel combustion, the pollutant is not particulate or the particulate emission is zero, exit the subprogram.
2. If the control device is acceptable for the standard, calculate the rated efficiency, output the controlled source to the Emission Standards File, and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emission Standards File, and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT PARTICULATE ?
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST22                                                      ES22   1
C     FUEL ELIMINATION STANDARD 22                                           ES22   2
C                                                                            ES22   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),          ES22   4
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),   ES22   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES22   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES22   7
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                               ES22   8
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES22   9
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),            ES22  10
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),            ES22  11
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),            ES22  12
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),            ES22  13
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),            ES22  14
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                            ES22  15
      DIMENSION IDEV(3)                                                     ES22  16
      DATA IDEV/27,28,29/                                                   ES22  17
C                                                                           ES22  18
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 2) GO TO 500                         ES22  19
C                                                                           ES22  20
      IF (EXEM(2,1) .LE. 0.0) GO TO 500                                     ES22  21
C                                                                           ES22  22
          IFLAG = 0                                                         ES22  23
          NREG  = 22                                                        ES22  24
          IFS   = TAB22(2,2,1)                                              ES22  25
C                                                                           ES22  26
      DO 400 LL=1,ISRC                                                      ES22  27
      IF (ICID(LL) .NE. IDEV(IFS)) GO TO 400                                ES22  28
          AEMN = EXEM(2,LL) * (1. - EFF(2,LL))                              ES22  29
          REFF = (PEMN - AEMN) / PEMN                                       ES22  30
      WRITE(20)NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL),      ES22  31
     .         EFF(2,LL),AEMN,   EXEM(2,LL),REFF,(FQTY(N,LL),N=1,4),      ES22  32
     .         IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG                      ES22  33
      GO TO 500                                                             ES22  34
  400 CONTINUE                                                              ES22  35
C     DEVICE NOT AVAILABLE USE EXISTING CONDITIONS.                         ES22  36
      REFF = 0.0                                                            ES22  37
      WRITE(20)NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),           ES22  38
     .         EFF(2,1),AEM(1),EXEM(2,1),REFF,(FQTY(N,1),N=1,4),            ES22  39
     .         IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG                        ES22  40
  500 CONTINUE                                                              ES22  41
      RETURN                                                                ES22  42
      END                                                                   ES22  43
```

SUBPROGRAM EST23

PURPOSE

The subprogram EST23 applies sulfur content limitations to the fuels which may be burned. This standard is applicable to sulfur dioxide control of fuel combustion sources.

CALLING SEQUENCE

CALL EST23

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

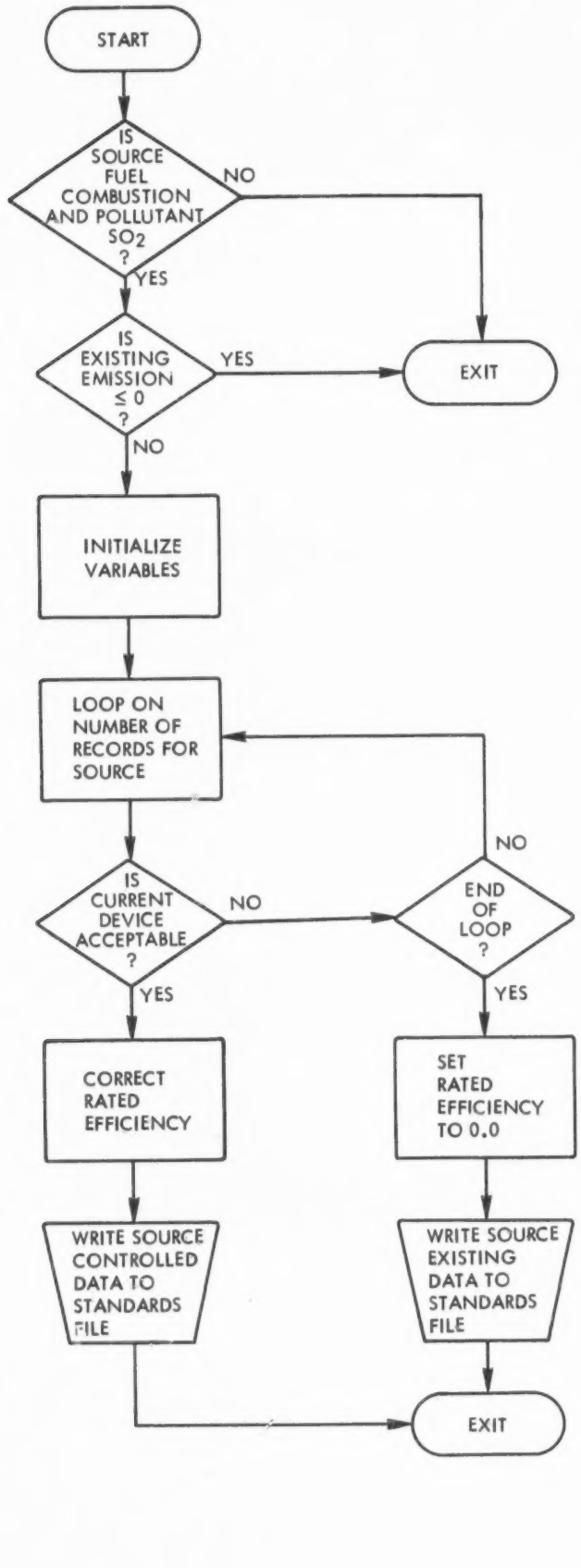
1. If the source is not fuel combustion, the pollutant is not SO_2 or the emission is zero, exit.
2. If the control device is acceptable for the standard, calculate the rated efficiency, output the controlled source to the Emission Standards File and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emission Standards File and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT SO_2 ?
NO
YES
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0.0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST23                                                  ES23   1
C     SUBROUTINE LIMITATION  STANDARD  23                               ES23   2
C                                                                        ES23   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),      ES23   4
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25), ES23   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),      ES23   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),           ES23   7
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                            ES23   8
C                                                                        ES23   9
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 1) GO TO 500                      ES23  10
C                                                                        ES23  11
      IF (EXEM(1,1) .LE. 0.0) GO TO 500                                  ES23  12
C                                                                        ES23  13
          IFLAG = 0                                                      ES23  14
          NREG  = 23                                                     ES23  15
C                                                                        ES23  16
      DO 400 LL=1,ISRC                                                   ES23  17
      IF (ICID(LL) .NE. 30) GO TO 400                                    ES23  18
          AEMN = AEM(LL)                                                 ES23  19
          REFF = (PEMN - AEMN) / PEMN                                    ES23  20
      WRITE (20) NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL), ES23  21
     .           EFF(2,LL),AEM(LL),EXEM(1,LL),REFF,(FQTY(N,LL),N=1,4),   ES23  22
     .             IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG               ES23  23
      GO TO 500                                                          ES23  24
  400 CONTINUE                                                           ES23  25
C  DEVICE 30 NOT AVAILABLE USE EXISTING CONDITIONS.                      ES23  26
      REFF = 0.0                                                         ES23  27
      WRITE (20) NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),      ES23  28
     .           EFF(2,1),AEM(1),EXEM(1,1),REFF,(FQTY(N,1),N=1,4),       ES23  29
     .             IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG.                ES23  30
  500 CONTINUE                                                           ES23  31
      RETURN                                                             ES23  32
      END                                                                ES23  33
```

SUBPROGRAM EST24

PURPOSE

The subprogram EST24 applies sulfur content limitations to the fuels which may be burned. This standard is applicable to sulfur dioxide control of fuel combustion sources only.

CALLING SEQUENCE

CALL EST24

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

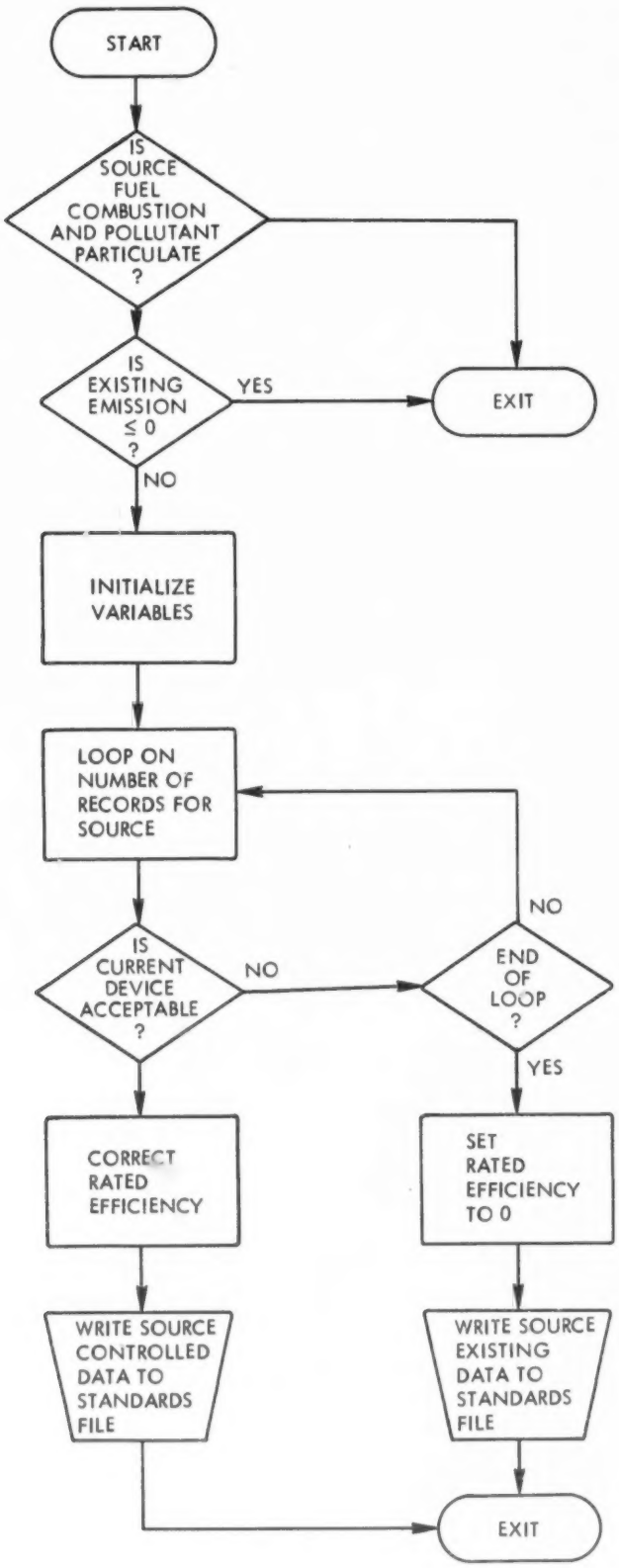
1. If the source is not fuel combustion, the pollutant is not SO_2 or the emission is zero, exit.
2. If the control device is acceptable for the emission standard, calculate the rated efficiency, output the controlled source to the Fmission Standards File and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emission Standards File and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV	Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT PARTICULATE ?
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST24                                                    ES24   1
C     SULFUR LIMITATION  STANDARD  24                                      ES24   2
C                                                                          ES24   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),        ES24   4
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),   ES24   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),       ES24   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),            ES24   7
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                             ES24   8
C                                                                          ES24   9
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 1) GO TO 500                        ES24  10
C                                                                          ES24  11
      IF (EXEM(1,1) .LE. 0.0) GO TO 500                                    ES24  12
C                                                                          ES24  13
          IFLAG = 0                                                        ES24  14
          NREG  = 24                                                       ES24  15
C                                                                          ES24  16
      DO 400 LL=1,ISRC                                                     ES24  17
      IF (ICID(LL) .NE. 31) GO TO 400                                      ES24  18
          AEMN = AEM(LL)                                                   ES24  19
          REFF = (PEMN - AEMN) / PEMN                                      ES24  20
      WRITE (20) NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL),   ES24  21
     .          EFF(2,LL),AEM(LL),EXEM(1,LL),REFF,(FQTY(N,LL),N=1,4),     ES24  22
     .            IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG                  ES24  23
      GO TO 500                                                            ES24  24
  400 CONTINUE                                                             ES24  25
C  DEVICE 31 NOT AVAILABLE USE EXISTING CONDITIONS.                        ES24  26
      REFF = 0.0                                                           ES24  27
      WRITE (20) NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),        ES24  28
     .          EFF(2,1),AEM(1),EXEM(1,1),REFF,(FQTY(N,1),N=1,4),        ES24  29
     .            IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG                    ES24  30
  500 CONTINUE                                                             ES24  31
      RETURN                                                               ES24  32
      END                                                                  ES24  33
```

SUBPROGRAM EST25

PURPOSE

The subprogram EST25 applies sulfur content limitations to the fuels which may be burned. This standard is applicable to sulfur dioxide control of fuel combustion sources only.

CALLING SEQUENCE

CALL EST25

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

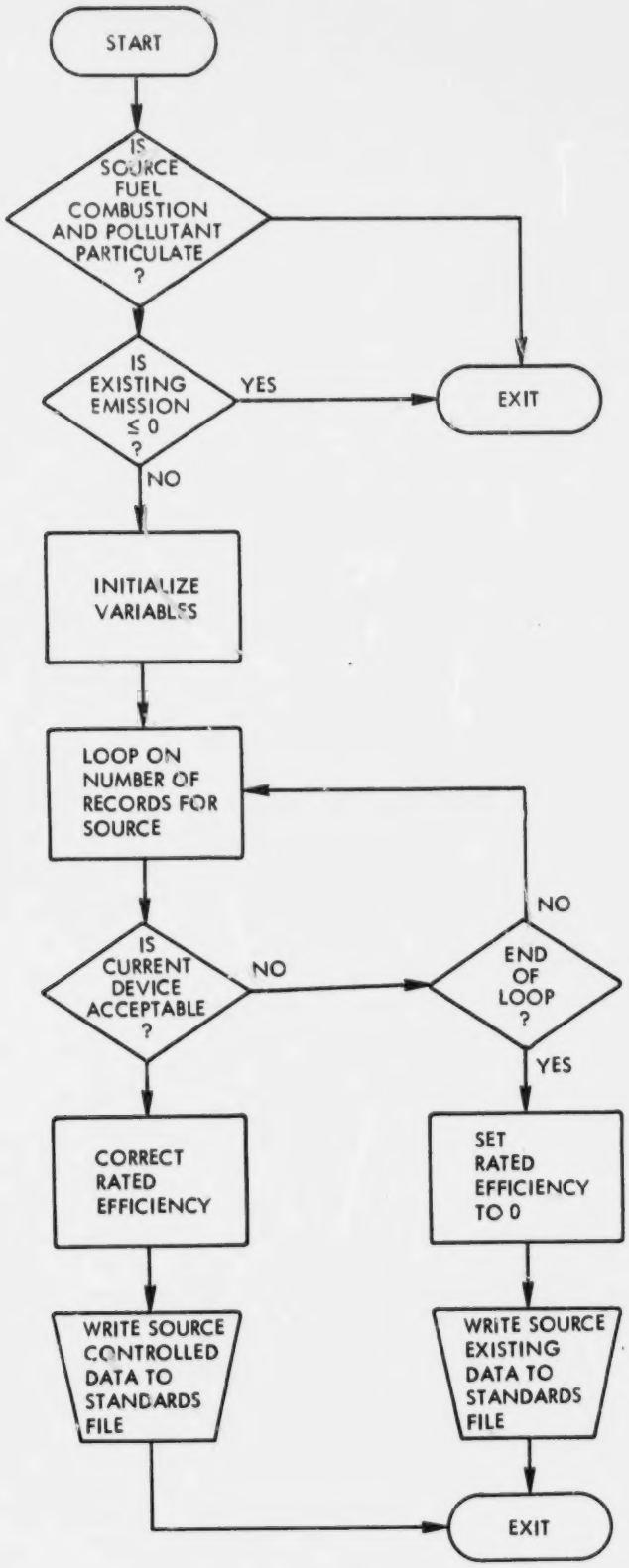
1. If the source is not fuel combustion, the pollutant is not SO_2 or the emission is zero, exit.
2. If the control device is acceptable for the standard, calculate the rated efficiency, output the controlled source to the Emission Standards File and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emission Standards File and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT PARTICULATE ?
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST25                                                      ES25   1
C     SULFUR LIMITATION  STANDARD  25                                       ES25   2
C                                                                            ES25   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),          ES25   4
     .EXEM(2,25),CEM,ICID(25),NREG    ,IPOL,IPJ(25),ITYPE(25),GVOL(25),     ES25   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),         ES25   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),              ES25   7
     .FQTY(4,25),IGAS(25),FQL(4),XNP(25),PEMN                               ES25   8
C                                                                            ES25   9
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 1) GO TO 500                          ES25  10
C                                                                            ES25  11
      IF (EXEM(1,1) .LE. 0.0) GO TO 500                                      ES25  12
C                                                                            ES25  13
          IFLAG = 0                                                          ES25  14
          NREG  = 25                                                         ES25  15
C                                                                            ES25  16
      DO 400 LL=1,ISRC                                                       ES25  17
      IF (ICID(LL) .NE. 32) GO TO 400                                        ES25  18
          AEMN = AEM(LL)                                                     ES25  19
          REFF = (PEMN - AEMN) / PEMN                                        ES25  20
      WRITE (20) NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL),     ES25  21
     .          EFF(2,LL),AEM(LL),EXEM(1,LL),REFF,(FQTY(N,LL),N=1,4),       ES25  22
     .            IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG                    ES25  23
      GO TO 500                                                              ES25  24
  400 CONTINUE                                                               ES25  25
C  DEVICE 32 NOT AVAILABLE USE EXISTING CONDITIONS.                          ES25  26
      REFF = 0.0                                                             ES25  27
      WRITE (20) NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),          ES25  28
     .          EFF(2,1),AEM(1),EXEM(1,1),REFF,(FQTY(N,1),N=1,4),           ES25  29
     .            IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG                      ES25  30
  500 CONTINUE                                                               ES25  31
      RETURN                                                                 ES25  32
      END                                                                    ES25  33
```

SUBPROGRAM EST26

PURPOSE

The subprogram EST26 applies sulfur content limitations to a source, however, the alternative of flue gas desulfurization is allowed, the emission level can be reduced by an equivalent amount.

CALLING SEQUENCE

CALL EST26

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G LEVEL 18

INPUT

None

OUTPUT

Emission Standards File (TAPE)

PROCEDURE

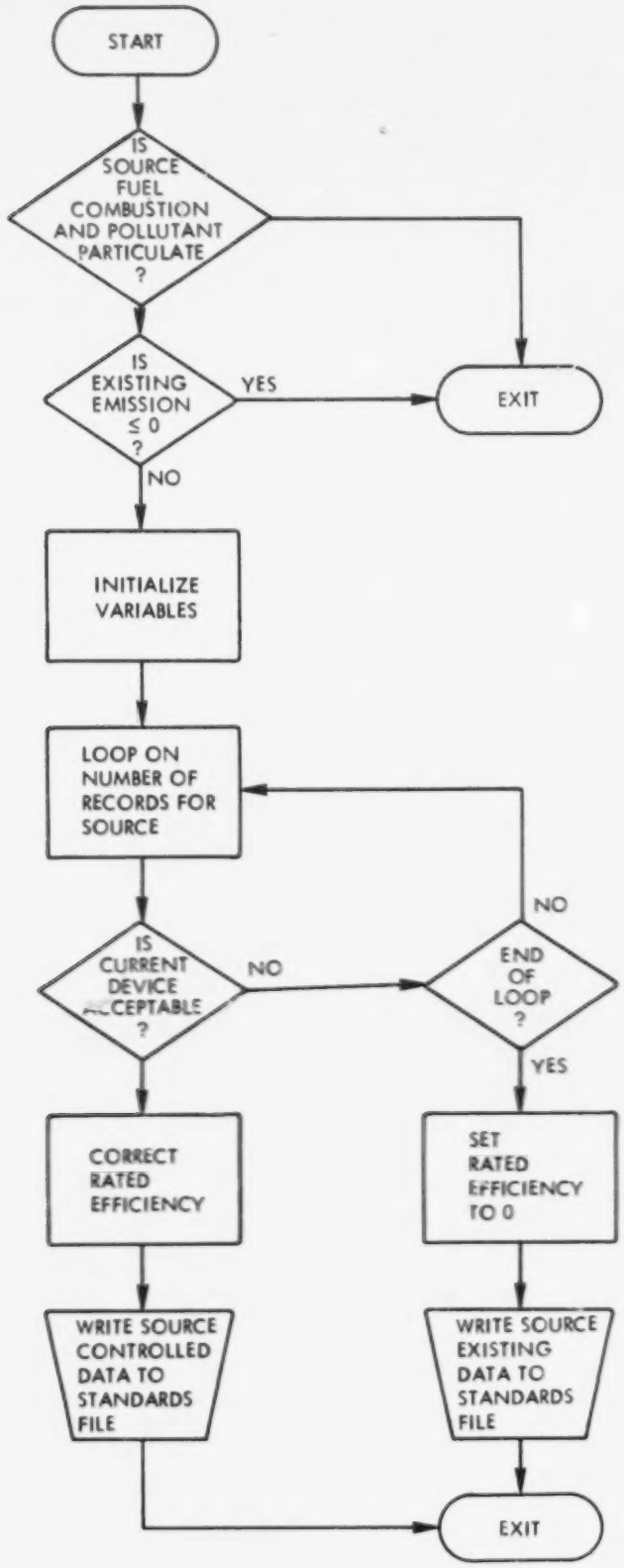
1. If the source is not fuel combustion, the pollutant is not SO_2 or the emission rate is zero, exit the subprogram.
2. If the control device is acceptable for standard, calculate the rated efficiency, output the controlled source to the Emission Standards File, and exit.
3. If the acceptable control device is not found, set the rated efficiency to zero, output the existing source to the Emission Standards File and exit.

SUBROUTINES

None

INPUT/OUTPUT VARIABLES

SRCDEV Common block containing source and device information from the Control Cost File.


START
IS SOURCE FUEL COMBUSTION AND POLLUTANT PARTICULATE ?
IS EXISTING EMISSION ≤ 0 ?
YES
EXIT
NO
INITIALIZE VARIABLES
LOOP ON NUMBER OF RECORDS FOR SOURCE
IS CURRENT DEVICE ACCEPTABLE ?
NO
END OF LOOP ?
NO
YES
CORRECT RATED EFFICIENCY
SET RATED EFFICIENCY TO 0
WRITE SOURCE CONTROLLED DATA TO STANDARDS FILE
WRITE SOURCE EXISTING DATA TO STANDARDS FILE
EXIT

```
      SUBROUTINE  EST26                                                      ES26   1
C     FUEL ELIMINATION STANDARD 26                                           ES26   2
C                                                                            ES26   3
      COMMON/SRCDEV/ISIC(25),ISITE(25),COSTI(25),EFF(2,25),AEM(25),          ES26   4
     .EXEM(2,25),CEM,ICID(25),NREG     ,IPOL,IPJ(25),ITYPE(25),GVOL(25),   ES26   5
     .PRATE(25),HS(25),SHIFT(25),TEMP(25),VEL(25),DIA(25),ICNT(25),          ES26   6
     .BTU(25),EFFN(2),ISRC,NREGON,ICLASS,FRATE(4,25),USEF(25),               ES26   7
     .FQTY(4,25),IGAS(25),FQN(4),XNP(25),PEMN                                ES26   8
      COMMON/TABS/TAB01(1,2,3),TAB02(1,2,3),TAB03(11,2,3),TAB04(11,2,3),ES26   9
     . TAB05(11,2,3),TAB06(11,2,3),TAB07(11,2,3),TAB08( 9,2,3),              ES26  10
     . TAB09( 9,2,3),TAB10( 9,2,3),TAB11(50,2,3),TAB12(28,2,3),              ES26  11
     . TAB13( 2,2,3),TAB14( 2,2,3),TAB15( 4,2,3),TAB16( 2,2,3),              ES26  12
     . TAB17( 2,2,3),TAB18(23,2,3),TAB19(23,2,3),TAB20(23,2,3),              ES26  13
     . TAB21( 2,2,3),TAB22( 2,2,3),TAB23( 1,2,3),TAB24( 1,2,3),              ES26  14
     . TAB25( 1,2,3),TAB26( 2,2,3),NPJ,NAMEPJ(5)                             ES26  15
      DIMENSION IDEV(3)                                                      ES26  16
      DATA IDEV/30,31,32/                                                    ES26  17
C                                                                            ES26  18
      IF (ICLASS .NE. 1 .OR. IPOL .NE. 1) GO TO 500                          ES26  19
C                                                                            ES26  20
      IF (EXEM(1,1) .LE. 0.0) GO TO 500                                      ES26  21
C                                                                            ES26  22
          IFLAG = 0                                                          ES26  23
          NREG  = 26                                                         ES26  24
          IFS   = TAB26(2,1,1)                                               ES26  25
C                                                                            ES26  26
      DO 400 LL=1,ISRC                                                       ES26  27
      IF (ICID(LL) .NE. IDEV(IFS)) GO TO 400                                 ES26  28
          AEMN = AEM(LL)                                                     ES26  29
          REFF = (PEMN - AEMN) / PEMN                                        ES26  30
      WRITE(20)NREGON,ISIC(LL),ISITE(LL),ICID(LL),COSTI(LL),EFF(1,LL),       ES26  31
     .          EFF(2,LL),AEM(LL),EXEM(1,LL),REFF,(FQTY(N,LL),N=1,4),      ES26  32
     .          IGAS(LL),IPOL,IPJ(LL),ICLASS,NREG,IFLAG                    ES26  33
      GO TO 500                                                              ES26  34
  400 CONTINUE                                                               ES26  35
C     DEVICE NOT AVAILABLE USE EXISTING CONDITIONS.                          ES26  36
      REFF = 0.0                                                             ES26  37
      WRITE(20)NREGON,ISIC(1),ISITE(1),ICID(1),COSTI(1),EFF(1,1),            ES26  38
     .          EFF(2,1),AEM(1),EXEM(1,1),REFF,(FQTY(N,1),N=1,4),          ES26  39
     .          IGAS(1),IPOL,IPJ(1),ICLASS,NREG,IFLAG                      ES26  40
  500 CONTINUE                                                               ES26  41
      RETURN                                                                 ERRO   1
      END                                                                    ERRO   2
```

SUBPROGRAM OPLIST

PURPOSE

To list the ESTAND output file

COMPUTER/LANGUAGE

IBM 360/FORTRAN IV G Ver.18

INPUT

Emission Standards File (TAPE)

OUTPUT

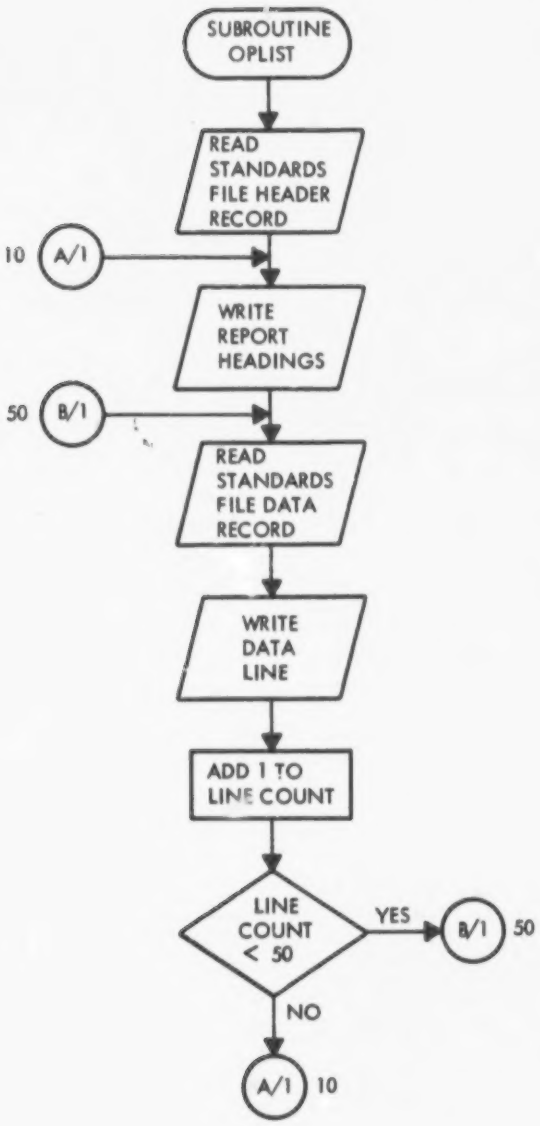
Emission Standards Report (PRINTER)

PROCEDURE

1. Subroutine writes report headings
2. Reads E.S.F. record
3. Writes the record
4. Repeats 2 and 3 until all records are read and written.

SUBROUTINES

None


SUBROUTINE OPLIST
READ STANDARDS FILE HEADER RECORD
10 A/1
WRITE REPORT HEADINGS
50 B/1
READ STANDARDS FILE DATA RECORD
WRITE DATA LINE
ADD 1 TO LINE COUNT
LINE COUNT < 50
YES
B/1 50
NO
A/1 10

```
      SUBROUTINE OPLIST                                                      OPLI   1
C                                                                            OPLI   2
      INTEGER IDATE(5),TITLE(5),DUMID(2)                                     OPLI   3
      DIMENSION EFFN(2),FQN(4)                                               OPLI   4
C                                                                            OPLI   5
      LCNT = 0                                                               OPLI   6
C                                                                            OPLI   7
      READ 20,END=150)  NREGON,DUMID(1),DUMID(2),(TITLE(I),I=1,5),           OPLI   8
     .          (IDATE(I),I=1,5)                                           OPLI   9
C                                                                            OPLI  10
C  WRITE  REPORT HEADING                                                     OPLI  11
C                                                                            OPLI  12
   10 WRITE (6,1)                                                          OPLI  13
    1 FORMAT('1')                                                          OPLI  14
      WRITE(6,2) NREGON,TITLE,IDATE                                        OPLI  15
    2 FORMAT('+',T58,'EMISSION STANDARDS'//T19,'REGION ',I3,T57,5A4,       OPLI  16
     . T104,'RUN DATE ',5A4/)                                              OPLI  17
C                                                                            OPLI  18
C  WRITE PAGE HEADINGS                                                       OPLI  19
C                                                                            OPLI  20
      WRITE (6,7)                                                          OPLI  21
    7 FORMAT(' ',33('____'))                                               OPLI  22
      WRITE (6,3)                                                          OPLI  23
    3 FORMAT(' ',T2,'|',T12,'|',T16,'EMISSION',T27,'|',T31,'EMISSION',     OPLI  24
     . T44,'|',T53,'|',T65,'DEVICE',T82,'|',T95,'FUEL QUANTITY',T120,'|COPLI  25
     .ODLED|',T133,'|'/T2,'| SOURCE',T12,'|',T16,'STANDARD',T27,'|',T30,OPLI  26
     .'(TONS/DAY)',T44,'|REQUIRED| ID|',T62,'COST',T68,'|  EFFICIENCY |'OPLI  27
     .,T85,'COAL',T91,'|RES. OIL|DIS. OIL|',T114,'GAS   | GAS',  T127,'|OPLI  28
     .ERROR|'/T2,'|',T12,'|PJ|NUM|POL|CAT|',T28, 'ALLOWED|EXISTING|',T47OPLI  29
     .,'EFF.',T53,'|',T57,'|',T68,'| SO2',T75,'| PART |TONS/DAY|GAL/DAY'OPLI  30
     .,T100,'|GAL/DAY',T109,'|CU FT/DAY |',T122,'FLAG | FLAG|')          OPLI  31
      WRITE (6,8)                                                          OPLI  32
C                                                                            OPLI  33
C  READ ESTAND O/P RECORD                                                    OPLI  34
C                                                                            OPLI  35
   50 CONTINUE                                                             OPLI  36
      READ(20,END=100)NREGON,NSIC,NSITE,NCD1,COSTN1,EFFN(1),EFFN(2),AEMNOPLI  37
     .   ,EXEMN,REFF,(FQN(N),N=1,4),NGAS,NPCL,NPJN,NCAT,NREG,NFLAG       OPLI  38
      REFF = REFF * 100.                                                   OPLI  39
      IF(REFF .LT. 0.0) REFF = 0.0                                         OPLI  40
      EFFN(1)= EFFN(1) * 100.                                              OPLI  41
      EFFN(2)= EFFN(2) * 100.                                              OPLI  42
C                                                                            OPLI  43
      WRITE(6,4)NSIC,NSITE,NPJN,NREG,NPCL,NCAT,AEMN,EXEMN,REFF,NCD1,       OPLI  44
     .          COSTN1,EFFN(1),EFFN(2),(FQN(N),N=1,4),NGAS,NFLAG           OPLI  45
    4 FORMAT(' ',T3,I4,I5,T13,I2,T17,I2,T21,I1,T25,I1,T28,F7.2,            OPLI  46
     .           T37,F7.2,T46,F6.1,T54,I3,T58,F10.0,T69,F6.1,T76,F6.1,     OPLI  47
     .       T84,F6.0,T92,F7.0,T101,F7.0,T110,F10.0,T124,I1,T130,I1)       OPLI  48
C                                                                            OPLI  49
      WRITE (6,9)                                                          OPLI  50
    9 FORMAT('+',T2,'|',T12,'|',T15,'|',T19,'|',T23,'|',T27,'|',T35,'|',OPLI  51
     .T44,'|',T53,'|',T57,'|',T68,'|',T75,'|',T82,'|',T91,'|',T100,'|',  OPLI  52
     .T109,'|',T120,'|',T127,'|',T133,'|')                                 OPLI  53
C                                                                            OPLI  54
```

```
          LCNT = LCNT +1                                          OPLI  55
        IF (LCNT .LT. 50) GO TO 50                                OPLI  56
C                                                                 OPLI  57
        WRITE (6,8)                                               OPLI  58
    8 FORMAT('+',33('____'))                                      OPLI  59
          LCNT = 0                                                OPLI  60
        GO TO 10                                                  OPLI  61
C                                                                 OPLI  62
  150 CONTINUE                                                    OPLI  63
        REWIND 20                                                 OPLI  64
        GO TO 10                                                  OPLI  65
  100 CONTINUE                                                    OPLI  66
        WRITE (6,8)                                               OPLI  67
        RETURN                                                    OPLI  68
        END                                                       OPLI  69
```

SUBPROGRAM ERROUT

PURPOSE

To list error messages.

COMPUTER/LANGUAGE

IBM360/ FORTRAN IV G Ver.18

INPUT

Error message file (DISK)

OUTPUT

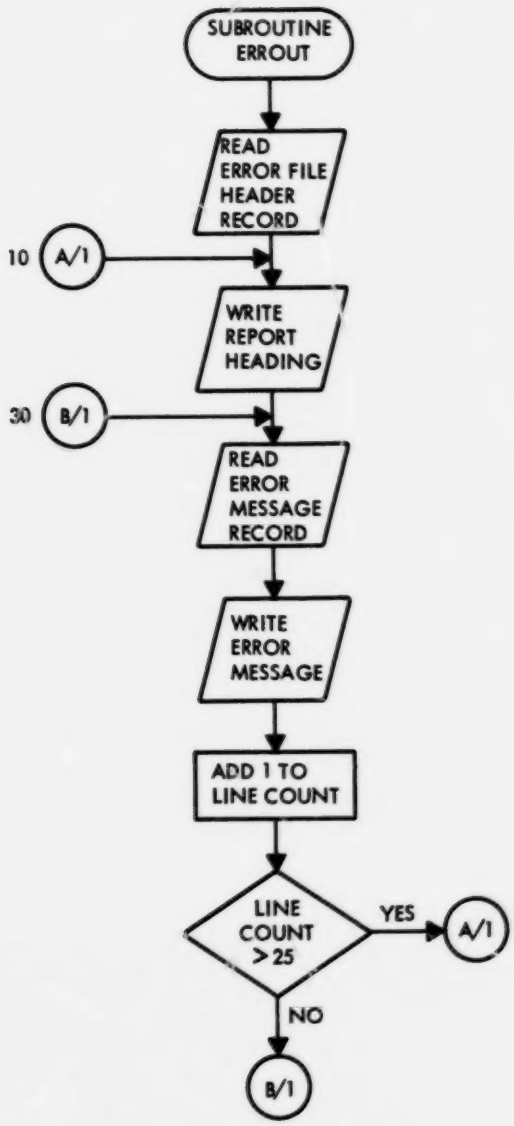
Error message report (PRINTER)

PROCEDURE

1. Write header
2. Read error message, record
3. Write message
4. Repeat 2-3 until all messages written.

SUBROUTINES

None


SUBROUTINE ERROUT
READ ERROR FILE HEADER RECORD
10
A/1
WRITE REPORT HEADING
30
B/1
READ ERROR MESSAGE RECORD
WRITE ERROR MESSAGE
ADD 1 TO LINE COUNT
LINE COUNT > 25
YES
A/1
NO
B/1

NOT REPRODUCIBLE

```
      SUBROUTINE ERROUT                                                    ERRO   3
      COMMON /DVICE/          IERR,IREGON,IBURN                            ERRO   4
      DIMENSION MESSGE(33),IDENT(4),DATA1(9),DATA2(5),KEY(4),IDATE(5)      ERRO   5
      READ (8,900) IDATE                                                   ERRO   6
  900 FORMAT(5X,5A4)                                                       ERRO   7
   10 WRITE (6,901) IREGON,IDATE                                           ERRO   8
      I = 0                                                                ERRO   9
  901 FORMAT('1',T42,'ERROR MESSAGES FOR CONTROL STRATEGY REGULATIONS'//ERRO  10
     1  T47,'REGION  ',I3,T63,'DATE OF RUN  ',5A4//)                       ERRO  11
   30 READ (8,902,END=500) ICNTRL, MESSGE                                  ERRO  12
  902 FORMAT(A1,33A4)                                                      ERRO  13
      WRITE (6,903) ICNTRL,MESSGE                                          ERRO  14
  903 FORMAT(A1,33A4)                                                      ERRO  15
      I = I +1                                                             ERRO  16
      IF (I .GT. 25) GO TO 10                                              ERRO  17
      GO TO 30                                                             ERRO  18
  500 CONTINUE                                                             ERRO  19
      REWIND 8                                                             ERRO  20
      RETURN                                                               ERRO  21
      END                                                                  ERRO  22
```

PROGRAM NAME ESFUPD

PURPOSE

To provide the capability to make corrections, deletions and/or additions to the Emission Standards File (generated by the Emission Standards Program).

COMPUTER/LANGUAGE

IBM 360 - COBOL F

INPUT

1. Title-Date Card
2. Update Cards
3. Regulation File (TAPE) DSNAME = ESFILE

OUTPUT

1. Error Messages
2. List of Updated Regulation File
3. Updated Regulation File.

PROCEDURE

The program consists of two steps. The first step sorts the update cards into the same order as the Emission Standards File (ESFILE). The second step processes the sorted update transaction file against the ESFILE

The program (in the second step) first reads one record from the update file (this is the Title-Date Card) and one record from the ESFILE (this is a control record).

Next, the update file and ESFILE are read. An 'A' (add) update is the only transaction allowed if the update key is lower than the ESFILE key. If the update is not an "A", it is rejected (with a message identifying

the record and the reason) and the next update card is read. The 'A' transaction is edited to insure all fields are numeric. Blank fields are considered incorrect and will cause rejection of the update record. If all fields are numeric, the record will be written out to the updated file.

If the two keys are equal, only a 'C' (change) or 'D' (delete) are acceptable as update transactions. If the update is a 'D', no further checking is done and the next record on both the update file and ESFILE are read. If the transaction is a "C", the program will just edit the non-blank fields for numeric data. Non-numeric data will cause rejection of the update record and the next update record will be read. If the record is acceptable, the numeric fields will replace the corresponding fields in the corresponding record from the ESFILE and this modified record will be written to the updated file.

If the update key is greater than the ESFILE key, the error flag on the ESFILE record will be examined. If it is equal to '1', a message will be printed. In any case, the ESFILE record will be written to the updated file.

When both files (the ESFILE and Update file) have been completely read, the program will print the newly created and updated FSFILE. After the last record is printed, the program terminates.

- Input Data Description

TITLE-DATE CARD

Columns	Description	Format
1-19	Blanks	
20-39	Report Description	X
40-57	Date of Run	X

UPDATE CARD	Record Length 80 Characters	
Columns	Description	Format
1	Transaction Code	X
	If X = A: Add a record	
	D: Delete the specified record	
	C: Change the specified record	
2-4	Region Number	999
5-8	SIC Number	9(4)
9-11	SITE Number	999
12-13	Process Number	99
14-15	Political Jurisdiction	99
16	Category	9
17	Pollutant Number	9
18-19	Standard Number	99
20-22	Device Number	999
23-31	Cost	9(9)
32-34	Sulfur Dioxide Control Device Efficiency	V999
35-37	Particulate Device Efficiency	V999
38-40	Required Efficiency	V999
41-47	Allowed Emissions	9(4)V999
48-54	Existing Emissions	9(4)V999
55	Gas Cooling Flag	9
56-60	Coal Quantity	9(5)
61-66	Residual Oil Quantity	9(6)
67-72	Distillate Oil Quantity	9(6)
73-80	Gas Quantity	9(8)

STANDARDS FILE Record Length 80 Characters

All fields occupy four bytes in the record.

Field Descriptions	Max. Size	Format
Region Number	999	Integer
SIC Number	9(4)	Integer
SITE Number	999	Integer
Process Number	99	Integer
Device Number	999	Integer
Device Cost	9(9)	Fl. Pt.
SO_2 Device Efficiency	9.99	Fl. Pt.
Particulate Device Efficiency	9.99	Fl. Pt.
Allowable Emission	9(4).999	Fl. Pt.
Existing Emission	9(4).999	Fl. Pt.
Required Efficiency	9.99	Fl. Pt.
Coal Quantity	9(5)	Fl. Pt.
Residual Oil Quantity	9(6)	Fl. Pt.
Distillate Oil Quantity	9(6)	Fl. Pt.
Gas Quantity	9(8)	Fl. Pt.
Gas Cooling Flag	9	Integer 0/1
Pollutant Number	9	Integer 1/2
Political Jurisdiction	99	Integer 1--10
Category Number	9	Integer 1--3
Standard Number	99	Integer 1--26
Error Flag	9	Integer 0/1

- Output Data Description

1. ERROR MESSAGES

The field identified as ID in the following messages consists of 13 characters composed of political jurisdiction (2), category (1), pollutant number (1), SIC number (4), SITE number (5), and standard number (2).

2. UPDATED STANDARDS FILE

Same as Standards File (See Input).

ESFU 01 ID ATTEMPTING ILLEGAL UPDATE

Caused by attempting to update a record not present. If the update is an ADD however, the transaction is legal.

ESFU 02 ID NON-NUMERIC FIELD IN UPDATE CARD

Caused by attempting to ADD a record which contains non-numeric data.

ESFU 03 IF ATTEMPTING ILLEGAL UPDATE

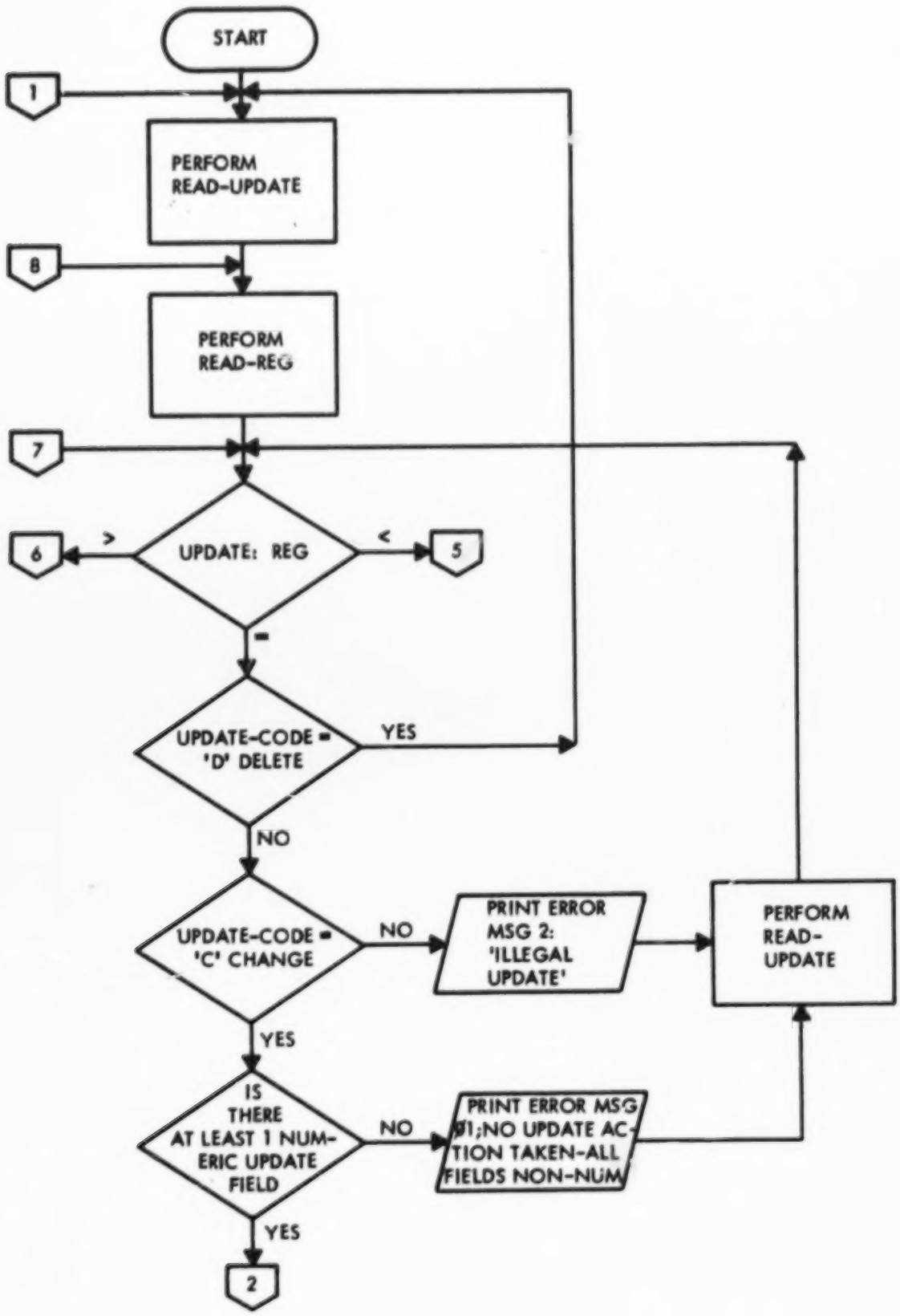
Caused by attempting to update an existing record with a code which is not a 'D' or 'C'.

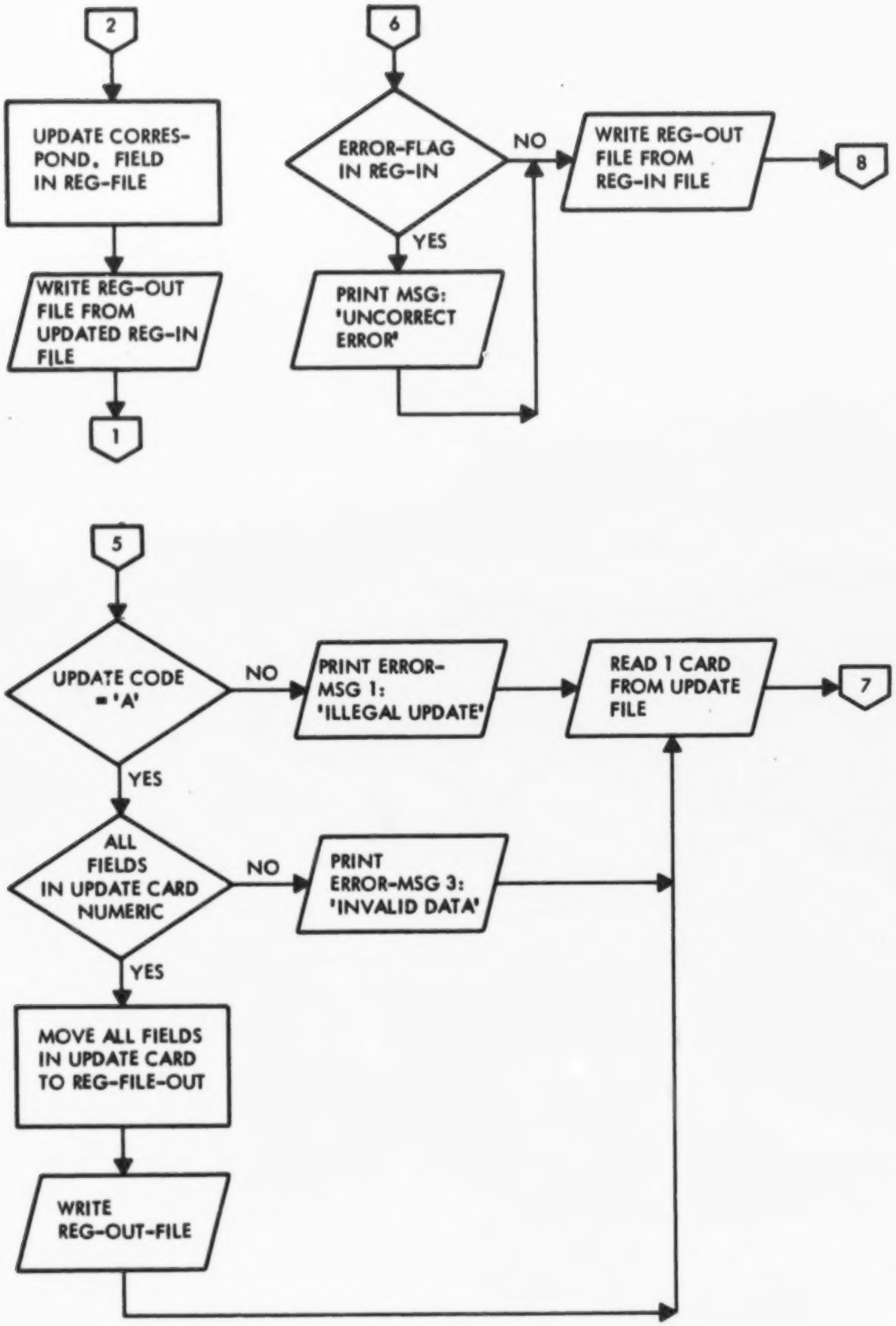
ESFU 04 ID NO UPDATE ACTION TAKEN - CARD HAS NON-NUMERIC FIELD

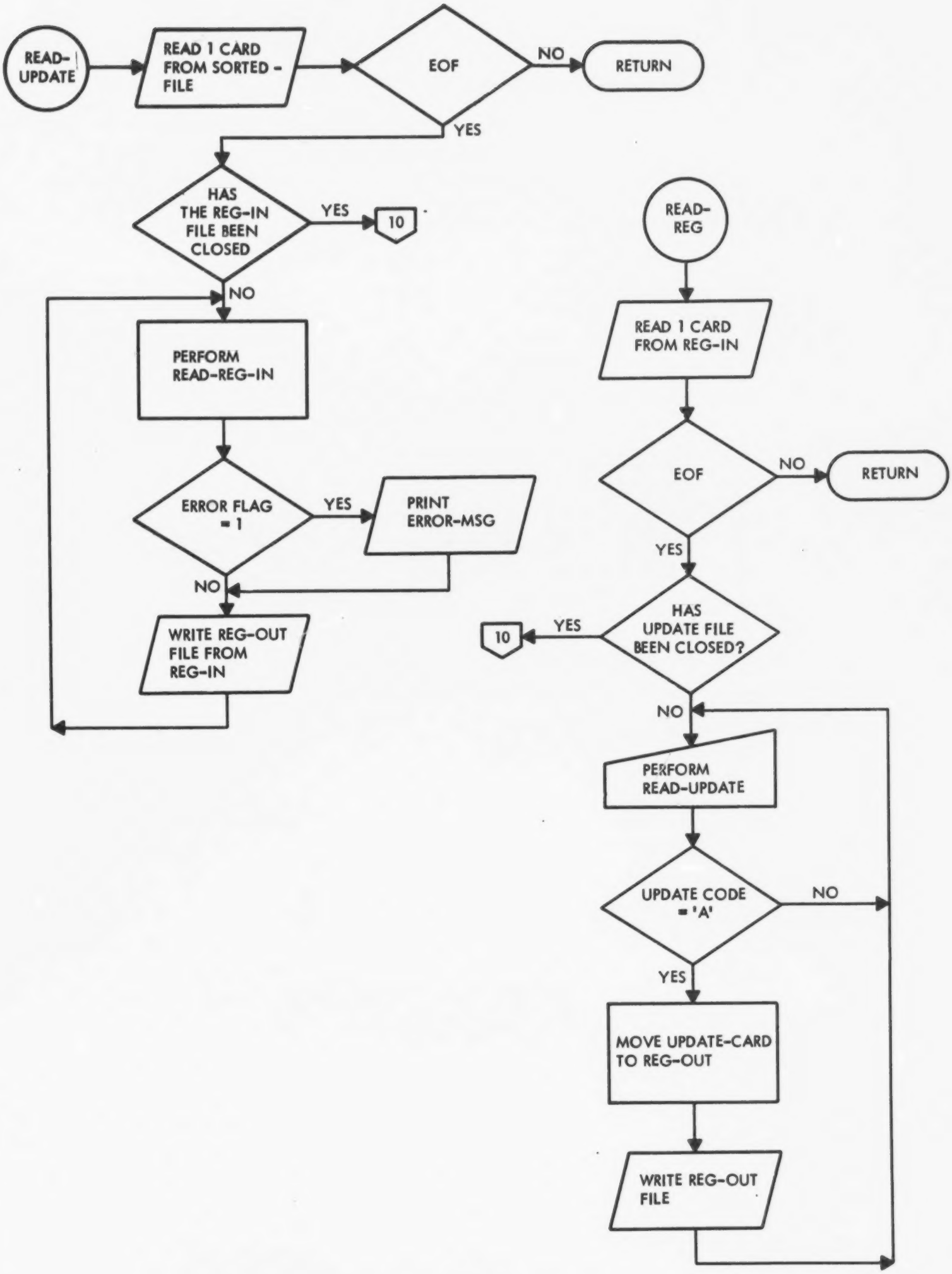
Caused by attempting a CHANGE update with a card which has a non-numeric field.

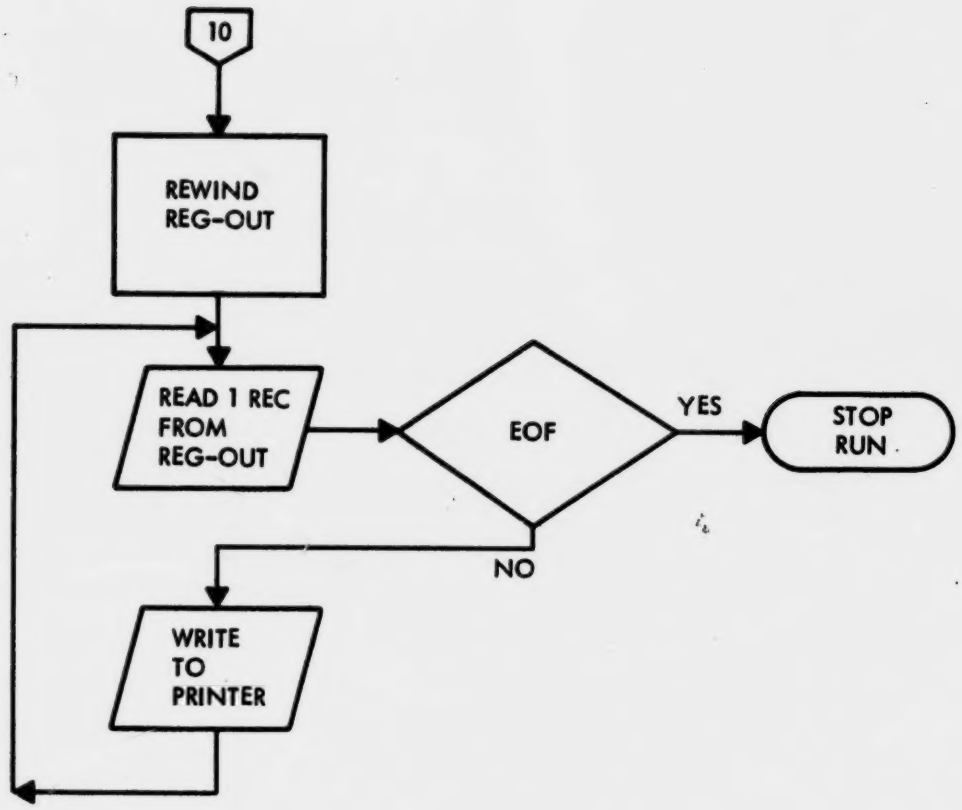
ESFU 05 ID UNCORRECTED ERROR ON UPDATED FILE

Caused by not updating a record which has the error flag set.


START
1
PERFORM READ-UPDATE
8
PERFORM READ-REG
7
6
>
UPDATE: REG
<
5
=
UPDATE-CODE = 'D' DELETE
YES
NO
UPDATE-CODE = 'C' CHANGE
NO
PRINT ERROR MSG 2: 'ILLEGAL UPDATE'
PERFORM READ-UPDATE
YES
IS THERE AT LEAST 1 NUMERIC UPDATE FIELD
NO
PRINT ERROR MSG 01;NO UPDATE ACTION TAKEN-ALL FIELDS NON-NUM
YES
2


2
UPDATE CORRES-
POND. FIELD
IN REG-FILE
WRITE REG-OUT
FILE FROM
UPDATED REG-IN
FILE
1
6
ERROR-FLAG
IN REG-IN
NO
YES
PRINT MSG:
'UNCORRECT
ERROR'
WRITE REG-OUT
FILE FROM
REG-IN FILE
8
5
UPDATE CODE
= 'A'
NO
YES
PRINT ERROR-
MSG 1:
'ILLEGAL UPDATE'
READ 1 CARD
FROM UPDATE
FILE
7
ALL
FIELDS
IN UPDATE CARD
NUMERIC
NO
YES
PRINT
ERROR-MSG 3:
'INVALID DATA'
MOVE ALL FIELDS
IN UPDATE CARD
TO REG-FILE-OUT
WRITE
REG-OUT-FILE


READ-UPDATE
READ 1 CARD FROM SORTED - FILE
EOF
NO
RETURN
YES
HAS THE REG-IN FILE BEEN CLOSED
YES
10
NO
PERFORM READ-REG-IN
ERROR FLAG = 1
YES
PRINT ERROR-MSG
NO
WRITE REG-OUT FILE FROM REG-IN
READ-REG
READ 1 CARD FROM REG-IN
EOF
NO
RETURN
YES
HAS UPDATE FILE BEEN CLOSED?
10
YES
NO
PERFORM READ-UPDATE
UPDATE CODE = 'A'
NO
YES
MOVE UPDATE-CARD TO REG-OUT
WRITE REG-OUT FILE


10
REWIND
REG-OUT
READ 1 REC
FROM
REG-OUT
EOF
YES
STOP
RUN
NO
WRITE
TO
PRINTER

```
00101  IDENTIFICATION DIVISION.                                          ESUP   1
00102  PROGRAM-ID. 'ESFUPD'.                                             ESUP   2
00103  ENVIRONMENT DIVISION.                                             ESUP   3
00104  CONFIGURATION SECTION.                                            ESUP   4
00105  SOURCE-COMPUTER. IBM-360.                                         ESUP   5
00106  OBJECT-COMPUTER. IBM-360.                                         ESUP   6
00107  INPUT-OUTPUT SECTION.                                             ESUP   7
00108  FILE-CONTROL.                                                     ESUP   8
00110      SELECT UPDATE-FILE-OUT ASSIGN TO 'SORTOUT' UTILITY.           ESUP   9
00111      SELECT ESTAND-FILE-IN ASSIGN TO 'OLDFILE' UTILITY.            ESUP  10
00112      SELECT ESTAND-FILE-OUT ASSIGN TO 'NEWFILE' UTILITY.           ESUP  11
00113      SELECT PRINT-OUT ASSIGN TO 'PRINTER' UNIT-RECORD.             ESUP  12
00114  DATA DIVISION.                                                    ESUP  13
00115  FILE SECTION.                                                     ESUP  14
00116  FD  UPDATE-FILE-OUT RECORDING MODE IS F,LABEL RECORDS STANDARD    ESUP  15
00117                     RECORD CONTAINS 80 CHARACTERS                  ESUP  16
           BLOCK CONTAINS 0 RECORDS                                      ESUP  17
00118                      DATA RECORD IS UPDATE-REC-OUT UPDATE.         ESUP  18
       01  UPDATE PICTURE X(80).                                        ESUP  19
00119  01  UPDATE-REC-OUT                                               ESUP  20
00120      02  UPDATE-CODE PICTURE X.                                   ESUP  21
           02  REG     PICTURE 999.                                     ESUP  22
           02  REX          REDEFINES  REG         PICTURE X(3).       ESUP  23
00201      02  SIC                     PICTURE 9(4).                    ESUP  24
           02  SIX          REDEFINES  SIC         PICTURE X(4).       ESUP  25
00202      02  SITE                    PICTURE 99999.                   ESUP  26
           02  SITX         REDEFINES  SITE        PICTURE X(5).       ESUP  27
00204      02  JUR                     PICTURE 99.                      ESUP  28
           02  JUX          REDEFINES  JUR         PICTURE XX.         ESUP  29
00205      02  CAT                     PICTURE 9.                       ESUP  30
           02  CAX          REDEFINES  CAT         PICTURE X.          ESUP  31
00206      02  POLL                    PICTURE 9.                       ESUP  32
           02  POLX         REDEFINES  POLL        PICTURE X.          ESUP  33
00207      02  STD-NO                  PICTURE 99.                      ESUP  34
           02  STD-NX       REDEFINES  STD-NO      PICTURE XX.         ESUP  35
00208      02  DEV                     PICTURE 999.                     ESUP  36
           02  DEX          REDEFINES  DEV         PICTURE XXX.        ESUP  37
00209      02  COST                    PICTURE  9(9).                   ESUP  38
           02  COSX         REDEFINES  COST        PICTURE X(9).       ESUP  39
00210      02  SO2-EFF                 PICTURE V999.                    ESUP  40
           02  SO2-EFX      REDEFINES  SO2-EFF     PICTURE XXX.        ESUP  41
00211      02  PART-EFF                PICTURE V999.                    ESUP  42
           02  PART-EFX     REDEFINES  PART-EFF    PICTURE XXX.        ESUP  43
00212      02  REQ-EFF                 PICTURE V999.                    ESUP  44
           02  REQ-EFX      REDEFINES  REQ-EFF     PICTURE XXX.        ESUP  45
00213      02  ALLOW-EM                PICTURE 9999V999.                ESUP  46
           02  ALLOW-EX     REDEFINES  ALLOW-EM    PICTURE X(7).       ESUP  47
00214      02  EXIST-EM                PICTURE 9(4)V999.                ESUP  48
           02  EXIST-EX     REDEFINES  EXIST-EM    PICTURE X(7).       ESUP  49
00215      02  GAS-COOL-FLAG           PICTURE 9.                       ESUP  50
           02  GAS-COOL-FLAX  REDEFINES GAS-COOL-FLAG PICTURE X.        ESUP  51
00216      02  COAL-QUANT              PICTURE 9(5).                    ESUP  52
           02  COAL-QUANX  REDEFINES COAL-QUANT     PICTURE X(5).       ESUP  53
00217      02  RES-OIL-QUANT           PICTURE 9(6).                    ESUP  54
```

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           02 RES-OIL-QUANX REDEFINES RES-OIL-QUANT PICTURE X(6).          ESUP  55
00218      02 DIST-OIL-QUANT       PICTURE 9(6).                          ESUP  56
           02  DIST-OIL-QUANX REDEFINES DIST-OIL-QUANT PICTURE X(6).      ESUP  57
00219      02  GAS-QUANT           PICTURE 9(8).                          ESUP  58
           02  GAS-QUANX REDEFINES GAS-QUANT PICTURE X(8).                ESUP  59
00407  FD  ESTAND-FILE-IN RECORDING MODE IS V,LABEL RECORDS STANDARD       ESUP  60
00408                 RECORD CONTAINS 80 CHARACTERS                        ESUP  61
           BLOCK CONTAINS 0 RECORDS                                        ESUP  62
00409                 DATA RECORD IS ESTAND-REC-IN.                        ESUP  63
00410  01  ESTAND-REC-IN                                                   ESUP  64
00411      02  LREG                PICTURE S999999 COMPUTATIONAL.         ESUP  65
00412      02  LSIC                PICTURE S999999 COMPUTATIONAL.         ESUP  66
00413      02  LSITE               PICTURE S999999 COMPUTATIONAL.         ESUP  67
00415      02  LDEV                PICTURE S999999 COMPUTATIONAL.         ESUP  68
004152     02  FLOATING-FIELDS.                                           ESUP  69
00416      03  LCOST                               COMPUTATIONAL-1.       ESUP  70
00417      03  LSO2-EFF                            COMPUTATIONAL-1.       ESUP  71
00418      03  LPART-EFF                           COMPUTATIONAL-1.       ESUP  72
00419      03  LALLOW-EM                           COMPUTATIONAL-1.       ESUP  73
00420      03  LEXIST-EM                           COMPUTATIONAL-1.       ESUP  74
00501      03  LREQ-EFF                            COMPUTATIONAL-1.       ESUP  75
00502      03  LCOAL-QUANT                         COMPUTATIONAL-1.       ESUP  76
00503      03  LRES-OIL-QUANT                      COMPUTATIONAL-1.       ESUP  77
00504      03  LDIST-OIL-QUANT                     COMPUTATIONAL-1.       ESUP  78
00505      03  LGAS-QUANT                          COMPUTATIONAL-1.       ESUP  79
005052     02  TITLE-DATE REDEFINES FLOATING-FIELDS PICTURE X(40).        ESUP  80
00506      02  LGAS-COOL-FLAG      PICTURE S999999 COMPUTATIONAL.         ESUP  81
00507      02  LPOLL               PICTURE S999999 COMPUTATIONAL.         ESUP  82
00508      02  LJUR                PICTURE S999999 COMPUTATIONAL.         ESUP  83
00509      02  LCAT                PICTURE S999999 COMPUTATIONAL.         ESUP  84
00510      02  LSTD-NO             PICTURE S999999 COMPUTATIONAL.         ESUP  85
00511      02  LERROR-FLAG         PICTURE S999999 COMPUTATIONAL.         ESUP  86
00512                                                                     ESUP  87
00513  FD  ESTAND-FILE-OUT  RECORDING MODE IS V LABEL RECORDS STANDARD     ESUP  88
00514                 RECORD CONTAINS 80 CHARACTERS                        ESUP  89
           BLOCK CONTAINS 0 RECORDS                                        ESUP  90
00515                 DATA RECORD IS ESTAND-REC-OUT.                       ESUP  91
00516  01  ESTAND-REC-OUT                                                  ESUP  92
00517      02  NREG                PICTURE S999999 COMPUTATIONAL.         ESUP  93
00518      02  NSIC                PICTURE S999999 COMPUTATIONAL.         ESUP  94
00519      02  NSITE               PICTURE S999999 COMPUTATIONAL.         ESUP  95
00601      02  NDEV                PICTURE S999999 COMPUTATIONAL.         ESUP  96
00602      02  NCOST                               COMPUTATIONAL-1.       ESUP  97
00603      02  NSO2-EFF                            COMPUTATIONAL-1.       ESUP  98
00604      02  NPART-EFF                           COMPUTATIONAL-1.       ESUP  99
00605      02  NALLOW-EM                           COMPUTATIONAL-1.       ESUP 100
00606      02  NEXIST-EM                           COMPUTATIONAL-1.       ESUP 101
00607      02  NREQ-EFF                            COMPUTATIONAL-1.       ESUP 102
00608      02  NCOAL-QUANT                         COMPUTATIONAL-1.       ESUP 103
00609      02  NRES-OIL-QUANT                      COMPUTATIONAL-1.       ESUP 104
00610      02  NDIST-OIL-QUANT                     COMPUTATIONAL-1.       ESUP 105
00611      02  NGAS-QUANT                          COMPUTATIONAL-1.       ESUP 106
006112     02  NGAS-COOL-FLAG      PICTURE S999999 COMPUTATIONAL.         ESUP 107
00612      02  NPOLL               PICTURE S999999 COMPUTATIONAL.         ESUP 108
00613      02  NJUR                PICTURE S999999 COMPUTATIONAL.         ESUP 109
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00614        02  NCAT                    PICTURE S999999 COMPUTATIONAL.      ESUP 110
00615        02  NSTD-NO                 PICTURE S999999 COMPUTATIONAL.      ESUP 111
00616        02  NERROR-FLAG             PICTURE S999999 COMPUTATIONAL.      ESUP 112
00701   FD   PRINT-OUT    RECORDING MODE IS F LABEL RECORDS OMITTED           ESUP 113
00702                     RECORD CONTAINS 133 CHARACTERS                      ESUP 114
00703                     DATA RECORD IS PRINT-REC                            ESUP 115
00704   01   PRINT-REC.                                                       ESUP 116
00705        02  PRINT-MSG    PICTURE X(133).                                 ESUP 117
00806   WORKING-STORAGE SECTION.                                             ESUP 118
   02   77   JUR3     PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 119
   04   77   CAT3     PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 120
   06   77   POLL3    PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 121
   08   77   SIC3     PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 122
   10   77   SITE3    PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 123
   12   77   STD-NO3  PICTURE S999999 COMPUTATIONAL VALUE 0.                  ESUP 124
   01   77   JUR2     PICTURE 99 VALUE 0.                                     ESUP 125
   03   77   CAT2     PICTURE 9 VALUE 0.                                      ESUP 126
   05   77   POLL2    PICTURE 9 VALUE 0.                                      ESUP 127
   07   77   SIC2     PICTURE 9(4) VALUE 0.                                   ESUP 128
   09   77   SITE2    PICTURE 9(5) VALUE 0.                                   ESUP 129
   11   77   STD-NO2  PICTURE 99 VALUE 0.                                    ESUP 130
        77   ZU PICTURE 9 VALUE 0.                                           ESUP 131
00807   77   ZZ  PICTURE X.                                                  ESUP 132
00808   77   ZX  PICTURE X VALUE ' '.                                        ESUP 133
        77   LN-CTR  PICTURE S99  VALUE 48 COMPUTATIONAL-3.                  ESUP 134
        77   ZV       PICTURE X VALUE ' '.                                    ESUP 135
        77   ZW       PICTURE 9 VALUE 0.                                      ESUP 136
        01   MSG-HDR.                                                        ESUP 137
             02  FILLER PICTURE X(50) VALUE ' '.                             ESUP 138
             02  FILLER PICTURE X(14) VALUE 'ERROR MESSAGES'.                ESUP 139
             02  FILLER PICTURE X(68) VALUE ' '.                             ESUP 140
   01   01   RPT-NAME.                                                       ESUP 141
   02        02  FILLER  PICTURE X(51) VALUE SPACES.                        ESUP 142
   03        02  FILLER  PICTURE X(31) VALUE 'EMISSION STANDARDS UPDATED FESUP 143
   04   -         'ILE'.                                                     ESUP 144
   05        02  FILLER  PICTURE X(50)  VALUE ' '.                          ESUP 145
   06   01   SUB1.                                                           ESUP 146
   07        02  FILLER  PICTURE X(35) VALUE SPACES.                        ESUP 147
   08        02  FILLER  PICTURE  X(7) VALUE 'REGION '.                     ESUP 148
   09        02  REGN    PICTURE  999.                                      ESUP 149
   10        02  FILLER  PICTURE X(11) VALUE ' '.                           ESUP 150
   11        02  REG-NAME PICTURE X(20) VALUE ' '.                          ESUP 151
   12        02  FILLER  PICTURE X(27) VALUE ' '.                           ESUP 152
   13        02  FILLER  PICTURE  X(9) VALUE 'RUN DATE '.                   ESUP 153
   14        02  RUN-DATE PICTURE X(18) VALUE ' '.                          ESUP 154
   15        02  FILLER  PICTURE X(12) VALUE ' '.                           ESUP 155
   16   01   REG-DATE-CARD.                                                  ESUP 156
        02   FILLER PICTURE X(19) VALUE ' '.                                ESUP 157
   17        02  RNAME   PICTURE X(20).                                     ESUP 158
   18        02  RDATE   PICTURE X(18).                                     ESUP 159
        01   DASHES.                                                         ESUP 160
             02  FILLER PICTURE X VALUE ' '.                                ESUP 161
             02  FILLER PICTURE X(132) VALUE ALL '_'.                       ESUP 162
   01   01   SUB2.                                                           ESUP 163
   01   02   SB21 PICTURE X(62) VALUE ' |        |   EMISSION   |   EMISSESUP 164
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02 -     'ION     |         |          '.                                  ESUP 165
    02   SB22 PICTURE X(71)  VALUE  '  DEVICE          |                 FESUP 166
03 -     'UEL QUANTITY              |COOLED|      |'.                      ESUP 167
    01   SUB3.                                                             ESUP 168
04  02   SB31 PICTURE X(64) VALUE ' | SOURCE  |   STANDARD   |  (TONS/ESUP 169
05 -     'DAY)     |REQUIRED| ID |   COS'.                                ESUP 170
    02   SB32 PICTURE X(69) VALUE   'T     |EFFICIENCY|  COAL  |RES. OESUP 171
06 -     'IL|DIS. OIL|     GAS    | GAS  |ERROR|'.                        ESUP 172
    01   SUB4.                                                             ESUP 173
    02   SB41 PICTURE X(63) VALUE ' |          |PJ|NUM|POL|CAT|ALLOWED|ESUP 174
08 -     'EXISTING|  EFF.  |     |      '.                                ESUP 175
    02   SB42 PICTURE X(70) VALUE   '        |SO2  |PART|TONS/DAY|GAL/DESUP 176
   -     'AY |GAL/DAY |CU FT/DAY | FLAG | FLAG|'.                         ESUP 177
10  01   DATA-LINE.                                                        ESUP 178
    02   FILLER PICTURE XX VALUE ' |'.                                     ESUP 179
11       02  PSIC     PICTURE 9(4).                                       ESUP 180
12       02  PSITE    PICTURE 9(5).                                       ESUP 181
13       02  FILLER   PICTURE  X VALUE '|'.                               ESUP 182
14       02  PJUR     PICTURE 99.                                         ESUP 183
15       02  FILLER   PICTURE XX VALUE '| '.                              ESUP 184
16       02  PSTD-NO  PICTURE 99.                                         ESUP 185
17       02  FILLER   PICTURE XX VALUE '| '.                              ESUP 186
18       02  PPOLL    PICTURE 9.                                          ESUP 187
19       02  FILLER   PICTURE XXX VALUE ' | '.                            ESUP 188
20       02  PCAT     PICTURE 9.                                          ESUP 189
01       02  FILLER   PICTURE XX  VALUE ' |'.                             ESUP 190
         02  PALLOW-EM PICTURE ---9.99.                                    ESUP 191
    02   FILLER PICTURE XX VALUE '| '.                                     ESUP 192
03       02  PEXIST-EM   PICTURE  ZZZ9.99.                                ESUP 193
         02  FILLER  PICTURE XX VALUE '| '.                               ESUP 194
         02  PREQ-EFF  PICTURE ---9.9.                                    ESUP 195
06       02  FILLER       PICTURE X(3) VALUE  ' | '.                      ESUP 196
07       02  PDEV         PICTURE ZZ9.                                    ESUP 197
08       02  FILLER       PICTURE X  VALUE '|'.                           ESUP 198
09       02  PCOST        PICTURE ---------9.                             ESUP 199
10       02  FILLER       PICTURE XXX VALUE '  |'.                        ESUP 200
11       02  PSO2-EFF     PICTURE Z9.9.                                   ESUP 201
12       02  FILLER       PICTURE XX VALUE ' |'.                          ESUP 202
13       02  PPART-EFF    PICTURE Z9.9.                                   ESUP 203
14       02  FILLER       PICTURE XX VALUE '| '.                          ESUP 204
15       02  PCOAL-QUANT PICTURE ZZZZ9.9.                                 ESUP 205
16       02  FILLER       PICTURE X    VALUE '|'.                         ESUP 206
17       02  PRES-OIL-QUANT PICTURE ZZZZZ9.9.                             ESUP 207
18       02  FILLER       PICTURE X VALUE '|'.                            ESUP 208
19       02  PDIST-OIL-QUANT PICTURE ZZZZZ9.9.                            ESUP 209
20       02  FILLER       PICTURE X VALUE '|'.                            ESUP 210
01       02  PGAS-QUANT PICTURE ZZZZZZZ9.9.                               ESUP 211
02       02  FILLER       PICTURE X(4) VALUE '|   '.                      ESUP 212
03       02  PGAS-COOL-FLAG PICTURE 9.                                    ESUP 213
04       02  FILLER       PICTURE X(5)  VALUE '  |  '.                    ESUP 214
05       02  PERROR-FLAG PICTURE 9.                                       ESUP 215
06       02  FILLER       PICTURE X(3) VALUE '  |'.                       ESUP 216
00706  01  PRINT-REC2.                                                    ESUP 217
       02  FILLER PICTURE X VALUE ' '.                                    ESUP 218
00707      02  FILLER                PICTURE X(4) VALUE 'ESFU'.           ESUP 219
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00708       02  MSG-NO                  PICTURE XX.                          ESUP 220
00709       02  FILLER                  PICTURE XX  VALUE SPACES.           ESUP 221
00710       02  DJUR                    PICTURE 99.                          ESUP 222
00711       02  DCAT                    PICTURE 9.                           ESUP 223
00712       02  DPOLL                   PICTURE 9.                           ESUP 224
00713       02  DSIC                    PICTURE 9(4).                        ESUP 225
00714       02  DSITE                   PICTURE 9(5).                        ESUP 226
00716       02  DSTD-NO                 PICTURE 99.                          ESUP 227
00717       02  FILLER                  PICTURE XX  VALUE '  '.              ESUP 228
00718       02  MSG                     PICTURE X(107) VALUE SPACES.         ESUP 229
00901   PROCEDURE DIVISION.                                                   ESUP 230
00906   UPDATE-PROC SECTION.                                                  ESUP 231
00907       OPEN INPUT UPDATE-FILE-OUT,ESTAND-FILE-IN                         ESUP 232
00908       OUTPUT PRINT-OUT,ESTAND-FILE-OUT.                                 ESUP 233
            READ UPDATE-FILE-OUT INTO REG-DATE-CARD AT END                    ESUP 234
            GO TO UPDATE-END.                                                 ESUP 235
            MOVE RNAME TO REG-NAME.                                           ESUP 236
             MOVE RDATE TO RUN-DATE.                                          ESUP 237
            WRITE PRINT-REC FROM MSG-HDR AFTER 0 LINES.                       ESUP 238
            READ ESTAND-FILE-IN AT END PERFORM READ-UPDATE                    ESUP 239
            MOVE '2' TO ZX GO TO U5.                                          ESUP 240
            MOVE LREG TO REGN.                                                ESUP 241
00911       WRITE ESTAND-REC-OUT FROM ESTAND-REC-IN.                          ESUP 242
00912   READ-UPDATE-REC.                                                      ESUP 243
00913       PERFORM READ-UPDATE.                                              ESUP 244
00914   READ-EST-REC.                                                         ESUP 245
00915       PERFORM READ-EST.                                                 ESUP 246
00916   TEST-SEQ.                                                             ESUP 247
            IF JUR  > LJUR  GO TO U4.                                         ESUP 248
            IF JUR  < LJUR  GO TO U5.                                         ESUP 249
            IF CAT  > LCAT  GO TO U4.                                         ESUP 250
            IF CAT  < LCAT  GO TO U5.                                         ESUP 251
            IF SIC  > LSIC  GO TO U4.                                         ESUP 252
            IF SIC  < LSIC  GO TO U5.                                         ESUP 253
            IF SITE > LSITE GO TO U4.                                         ESUP 254
            IF SITE < LSITE GO TO U5.                                         ESUP 255
            IF POLL > LPOLL GO TO U4.                                         ESUP 256
            IF POLL < LPOLL GO TO U5.                                         ESUP 257
            IF STD-NO < LSTD-NO GO TO U5.                                     ESUP 258
            IF STD-NO > LSTD-NO GO TO U4.                                     ESUP 259
            GO TO UPDATE-3.                                                   ESUP  60
01012   U5.                                                                   ESUP
            MOVE 1 TO ZZ.                                                     ESUP  62
01013       IF UPDATE-CODE     EQUAL TO 'A' GO TO U7.                         ESUP 263
01014       MOVE    'ATTEMPTING ILLEGAL UPDATE' TO MSG                        ESUP 264
01015       MOVE '01' TO MSG-NO                                               ESUP 265
01016   U1. PERFORM PRINT-ID PERFORM READ-UPDATE                              ESUP 266
            IF ZX = 2 GO TO U5.                                               ESUP 267
            IF ZU = 2 GO TO U9.                                               ESUP 268
            GO TO TEST-SEQ.                                                   ESUP 269
        U7.                                                                   ESUP 270
            IF REG       NOT NUMERIC GO TO U12.                               ESUP 271
            IF SIC       NOT NUMERIC GO TO U12.                               ESUP 272
            IF SITE      NOT NUMERIC GO TO U12.                               ESUP 273
            IF COST      NOT NUMERIC GO TO U12.                               ESUP 274
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           IF SO2-EFF    NOT NUMERIC GO TO U12.                              ESUP 275
           IF DEV        NOT NUMERIC GO TO U12.                              ESUP 276
           IF PART-EFF   NOT NUMERIC GO TO U12.                              ESUP 277
           IF ALLOW-EM   NOT NUMERIC GO TO U12.                              ESUP 278
           IF EXIST-EM   NOT NUMERIC GO TO U12.                              ESUP 279
           IF REQ-EFF    NOT NUMERIC GO TO U12.                              ESUP 280
           IF COAL-QUANT NOT NUMERIC GO TO U12.                              ESUP 281
           IF RES-OIL-QUANT   NOT NUMERIC GO TO U12.                         ESUP 282
           IF DIST-OIL-QUANT  NOT NUMERIC GO TO U12.                         ESUP 283
           IF GAS-QUANT       NOT NUMERIC GO TO U12.                         ESUP 284
           IF POLL            NOT NUMERIC GO TO U12.                         ESUP 285
           IF JUR             NOT NUMERIC GO TO U12.                         ESUP 286
           IF CAT             NOT NUMERIC GO TO U12.                         ESUP 287
           IF STD-NO          NOT NUMERIC GO TO U12.                         ESUP 288
           GO TO U13.                                                        ESUP 289
       U12.                                                                  ESUP 290
           MOVE '02' TO MSG-NO                                               ESUP 291
01106      MOVE 'NON-NUMERIC FIELD IN UPDATE CARD' TO MSG GO TO U1           ESUP 292
       U13.     MOVE JUR TO NJUR MOVE CAT TO NCAT MOVE POLL TO NPOLL         ESUP 293
01108      MOVE SIC TO NSIC MOVE SITE TO NSITE MOVE REG TO NREG              ESUP 294
01109                          MOVE DEV TO NDEV MOVE COST TO NCOST           ESUP 295
01110      MOVE SO2-EFF TO NSO2-EFF MOVE PART-EFF TO NPART-EFF               ESUP 296
01111      MOVE ALLOW-EM TO NALLOW-EM MOVE EXIST-EM TO NEXIST-EM             ESUP 297
01112      MOVE REQ-EFF TO NREQ-EFF MOVE COAL-QUANT TO NCOAL-QUANT           ESUP 298
01113      MOVE RES-OIL-QUANT TO NRES-OIL-QUANT                              ESUP 299
01114      MOVE DIST-OIL-QUANT TO NDIST-OIL-QUANT                            ESUP 300
01115      MOVE GAS-QUANT TO NGAS-QUANT                                      ESUP 301
01116      MOVE GAS-COOL-FLAG TO NGAS-COOL-FLAG                              ESUP 302
01117      MOVE STD-NO TO NSTD-NO MOVE 0 TO NERROR-FLAG.                     ESUP 303
01118      WRITE ESTAND-REC-OUT                                              ESUP 304
01119      PERFORM READ-UPDATE                                               ESUP 305
011191     IF ZX = 2 GO TO U5.                                               ESUP 306
           IF ZU = 2 GO TO U9.                                               ESUP 307
01120      GO TO TEST-SEQ.                                                   ESUP 308
01201  U4.                                                                   ESUP 309
           MOVE 2 TO ZZ.                                                     ESUP 310
01202      IF LERROR-FLAG =       1                                          ESUP 311
01602      MOVE 'UNCORRECTED ERROR ON UPDATED FILE' TO MSG                   ESUP 312
01603      MOVE '05' TO MSG-NO                                               ESUP 313
           PERFORM PRINT-ID-EST.                                             ESUP 314
01203      WRITE ESTAND-REC-OUT FROM ESTAND-REC-IN.                          ESUP 315
01204  U3. GO TO READ-EST-REC.                                               ESUP 316
01205  UPDATE-3.                                                             ESUP 317
           MOVE 3 TO ZZ.                                                     ESUP 318
01206      IF UPDATE-CODE =      'D' GO TO READ-UPDATE-REC.                  ESUP 319
01207      IF UPDATE-CODE     EQUAL TO 'C' GO TO U8.                         ESUP 320
01208      MOVE '03' TO MSG-NO                                               ESUP 321
01209      MOVE 'ATTEMPTING ILLEGAL UPDATE' TO MSG PERFORM PRINT-ID          ESUP 322
01210  U2. PERFORM READ-UPDATE                                               ESUP 323
01211      GO TO TEST-SEQ.                                                   ESUP 324
   08  U8. IF REG NOT = ' ' IF REG            NOT NUMERIC GO TO U15.        ESUP 325
   09      IF SIC NOT = ' ' IF SIC            NOT NUMERIC GO TO U15.         ESUP 326
   10      IF SITE NOT = ' ' IF SITE          NOT NUMERIC GO TO U15.         ESUP 327
   12      IF DEV NOT = ' ' IF DEV            NOT NUMERIC GO TO U15.         ESUP 328
   13      IF COST NOT = ' ' IF COST          NOT NUMERIC GO TO U15.         ESUP 329
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   15      IF SO2-EFF NOT = ' ' IF SO2-EFF      NOT NUMERIC GO TO U15.    ESUP 330
   17      IF PART-EFF NOT = ' ' IF PART-EFF    NOT NUMERIC GO TO U15.    ESUP 331
   19      IF ALLOW-EM NOT = ' ' IF ALLOW-EM    NOT NUMERIC GO TO U15.    ESUP 332
   01      IF EXIST-EM NOT = ' ' IF EXIST-EM    NOT NUMERIC GO TO U15.    ESUP 333
   03      IF REQ-EFF NOT = ' ' IF REQ-EFF      NOT NUMERIC GO TO U15.    ESUP 334
   05      IF COAL-QUANT NOT = ' ' IF COAL-QUANT NOT NUMERIC GO TO U15.   ESUP 335
   07      IF DIST-OIL-QUANT NOT = ' ' IF DIST-OIL-QUANT NOT NUMERIC      ESUP 336
   08      GO TO U15.                                                     ESUP 337
   09      IF GAS-QUANT NOT = ' ' IF GAS-QUANT NOT NUMERIC GO TO U15.     ESUP 338
   11      IF GAS-COOL-FLAG NOT = ' ' IF GAS-COOL-FLAG NOT NUMERIC        ESUP 339
   12      GO TO U15.                                                     ESUP 340
   13      IF  POLL NOT = ' ' IF POLL NOT NUMERIC GO TO U15.              ESUP 341
   15      IF JUR NOT = ' ' IF JUR NOT NUMERIC GO TO U15.                 ESUP 342
   16      IF CAT NOT = ' ' IF CAT NOT NUMERIC GO TO U15.                 ESUP 343
   17      IF STD-NO NOT = ' ' IF STD-NO NOT NUMERIC GO TO U15.           ESUP 344
   18      MOVE 0 TO LERROR-FLAG.                                         ESUP 345
   19      IF REG   NUMERIC    MOVE REG TO LREG.                          ESUP 346
   20      IF SIC   NUMERIC    MOVE SIC TO LSIC.                          ESUP 347
   01      IF  SITE          NUMERIC MOVE SITE       TO LSITE             ESUP 348
   02      IF  JUR           NUMERIC MOVE JUR        TO LJUR.             ESUP 349
   03      IF  CAT           NUMERIC MOVE CAT        TO LCAT.             ESUP 350
   04      IF  POLL          NUMERIC MOVE POLL       TO LPOLL.            ESUP 351
   05      IF  STD-NO        NUMERIC MOVE STD-NO     TO LSTD-NO.          ESUP 352
   06      IF  DEV           NUMERIC MOVE DEV        TO LDEV.             ESUP 353
   07      IF  COST          NUMERIC MOVE COST       TO LCOST.            ESUP 354
   08      IF  SO2-EFF       NUMERIC MOVE SO2-EFF    TO LSO2-EFF.         ESUP 355
   09      IF  PART-EFF      NUMERIC MOVE PART-EFF   TO LPART-EFF.        ESUP 356
   10      IF  REQ-EFF       NUMERIC MOVE REQ-EFF    TO LREQ-EFF.         ESUP 357
   11      IF  ALLOW-EM      NUMERIC MOVE ALLOW-EM   TO LALLOW-EM.        ESUP 358
   12      IF  EXIST-EM      NUMERIC MOVE EXIST-EM   TO LEXIST-EM.        ESUP 359
   13      IF  COAL-QUANT    NUMERIC MOVE COAL-QUANT TO LCOAL-QUANT.      ESUP 360
   14      IF  GAS-QUANT     NUMERIC MOVE GAS-QUANT  TO LGAS-QUANT.       ESUP 361
   15      IF GAS-COOL-FLAG NUMERIC MOVE GAS-COOL-FLAG TO LGAS-COOL-FLAGESUP 362
           .                                                              ESUP 363
   16      IF RES-OIL-QUANT NUMERIC MOVE RES-OIL-QUANT TO LRES-OIL-QUANTESUP 364
           .                                                              ESUP 365
   17      IF DIST-OIL-QUANT NUMERIC MOVE DIST-OIL-QUANT TO               ESUP 366
   18      LDIST-OIL-QUANT.                                               ESUP 367
   04      WRITE ESTAND-REC-OUT FROM ESTAND-REC-IN.                       ESUP 368
   05      GO TO READ-UPDATE-REC.                                         ESUP 369
   06  U15.                                                               ESUP 370
   07      MOVE '04' TO MSG-NO.                                           ESUP 371
   08      MOVE 'NO UPDATE ACTION TAKEN--CARD HAS NON-NUMERIC FIELD' TO   ESUP 372
   09      MSG     PERFORM PRINT-ID                                       ESUP 373
   10      GO TO U2.                                                      ESUP 374
01408  READ-UPDATE SECTION.                                               ESUP 375
C1409      READ UPDATE-FILE-OUT AT END GO TO UPDATE-END.                  ESUP 376
   01      IF REX NOT = ' '        EXAMINE REX REPLACING ALL ' ' BY '0'.  ESUP 377
   02      IF SIX NOT = ' '    EXAMINE SIX     REPLACING ALL ' ' BY '0'.  ESUP 378
   03      IF SITX NOT = ' '   EXAMINE SITX    REPLACING ALL ' ' BY '0'.  ESUP 379
   04      IF COSX NOT = ' '   EXAMINE COSX    REPLACING ALL ' ' BY '0'.  ESUP 380
   05      IF DEX  NOT = ' '   EXAMINE DEX     REPLACING ALL ' ' BY '0'.  ESUP 381
   06      IF POLX NOT = ' '   EXAMINE POLX    REPLACING ALL ' ' BY '0'.  ESUP 382
   07      IF JUX  NOT = ' '   EXAMINE JUX     REPLACING ALL ' ' BY '0'.  ESUP 383
   08      IF CAX  NOT = ' '   EXAMINE CAX     REPLACING ALL ' ' BY '0'.  ESUP 384
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09      IF SO2-EFX NOT = ' ' EXAMINE SO2-EFX REPLACING ALL ' ' BY     ESUP 385
10      '0'.                                                          ESUP 386
11      IF PART-EFX NOT = ' ' EXAMINE PART-EFX REPLACING ALL ' ' BY   ESUP 387
12      '0'.                                                          ESUP 388
13      IF ALLOW-EX NOT = ' ' EXAMINE ALLOW-EX REPLACING ALL ' ' BY   ESUP 389
14      '0'.                                                          ESUP 390
15      IF EXIST-EX NOT = ' ' EXAMINE EXIST-EX REPLACING ALL ' ' BY   ESUP 391
16      '0'.                                                          ESUP 392
17      IF REQ-EFX NOT = ' ' EXAMINE REQ-EFX REPLACING ALL ' ' BY     ESUP 393
18      '0'.                                                          ESUP 394
19      IF COAL-QUANX NOT = ' ' EXAMINE COAL-QUANX REPLACING ALL ' '  ESUP 395
20      BY '0'.                                                       ESUP 396
01      IF RES-OIL-QUANX NOT = ' ' EXAMINE RES-OIL-QUANX REPLACING    ESUP 397
02      ALL ' ' BY '0'.                                               ESUP 398
03      IF DIST-OIL-QUANX NOT = ' ' EXAMINE DIST-OIL-QUANX REPLACING  ESUP 399
04      ALL ' ' BY '0'.                                               ESUP 400
05      IF GAS-QUANX NOT = ' ' EXAMINE GAS-QUANX REPLACING ALL ' ' BY ESUP 401
06      '0'.                                                          ESUP 402
07      IF STD-NX NOT = ' ' EXAMINE STD-NX REPLACING ALL ' ' BY '0'.  ESUP 403
07      IF JUR < JUR2 GO TO U30.                                      ESUP 404
08      IF JUR > JUR2 GO TO U35.                                      ESUP 405
09      IF CAT < CAT2 GO TO U30.                                      ESUP 406
10      IF CAT > CAT2 GO TO U35.                                      ESUP 407
13      IF SIC < SIC2 GO TO U30.                                      ESUP 408
14      IF SIC > SIC2 GO TO U35.                                      ESUP 409
15      IF SITE < SITE2 GO TO U30.                                    ESUP 410
16      IF SITE > SITE2 GO TO U35.                                    ESUP 411
11      IF POLL < POLL2 GO TO U30.                                    ESUP 412
12      IF POLL > POLL2 GO TO U35.                                    ESUP 413
17      IF STD-NO < STD-NO2 GO TO U30.                                ESUP 414
18  U35.                                                              ESUP 415
01          MOVE JUR     TO  JUR2                                     ESUP 416
02          MOVE CAT     TO  CAT2                                     ESUP 417
03          MOVE POLL    TO  POLL2                                    ESUP 418
04          MOVE SIC     TO  SIC2                                     ESUP 419
05          MOVE SITE    TO  SITE2                                    ESUP 420
06          MOVE STD-NO TO  STD-NO2                                   ESUP 421
C1410       GO TO READ-1.                                             ESUP 422
04  U30.                                                              ESUP 423
05          MOVE '06' TO MSG-NO.                                      ESUP 424
06          MOVE 'PGM TERM--UPDATE CARDS OUT OF ORDER' TO MSG         ESUP 425
07          PERFORM PRINT-ID                                          ESUP 426
08          CLOSE ESTAND-FILE-IN UPDATE-FILE-OUT                      ESUP 427
09          GO TO STOP-RUN                                            ESUP 428
01411   UPDATE-END. IF ZX =       '2' CLOSE ESTAND-FILE-IN            ESUP 429
01412       ESTAND-FILE-OUT GO TO PRINT-EST.                          ESUP 430
            MOVE 2 TO ZU    IF ZZ = 3 PERFORM READ-EST                ESUP 431
        U9. PERFORM U4.                                               ESUP 432
01413       PERFORM READ-EST                                          ESUP 433
01414       GO TO U9.                                                 ESUP 434
01415   READ-1. EXIT.                                                 ESUP 435
01416   READ-EST SECTION.                                             ESUP 436
01417       READ ESTAND-FILE-IN AT END GO TO EST-END.                 ESUP 437
16          IF LJUR < JUR3 GO TO U40.                                 ESUP 438
17          IF LJUR > JUR3 GO TO U45.                                 ESUP 439
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   18       IF LCAT < CAT3 GO TO U40.                                      ESUP 440
   19       IF LCAT > CAT3 GO TO U45.                                      ESUP 441
   02       IF LSIC < SIC3 GO TO U40.                                      ESUP 442
   03       IF LSIC > SIC3 GO TO U45.                                      ESUP 443
   04       IF LSITE < SITE3 GO TO U40.                                    ESUP 444
   05       IF LSITE > SITE3 GO TO U45.                                    ESUP 445
   20       IF LPOLL < POLL3 GO TO U40.                                    ESUP 446
   21       IF LPOLL > POLL3 GO TO U45.                                    ESUP 447
   06       IF LSTD-NO < STD-NO3 GO TO U40.                                ESUP 448
   07       IF LSTD-NO > STD-NO3 GO TO U45.                                ESUP 449
   08  U40.                                                                ESUP 450
   09       MOVE '07' TO MSG-NO.                                           ESUP 451
   10       MOVE 'PGM TERM--EMISSION FILE OUT OF ORDER' TO MSG             ESUP 452
            PERFORM PRINT-ID-EST                                           ESUP 453
            CLOSE ESTAND-FILE-IN UPDATE-FILE-OUT                           ESUP 454
            CLOSE ESTAND-FILE-OUT                                          ESUP 455
            GO TO PRINT-EST                                                ESUP 456
   12  U45.                                                                ESUP 457
   10       MOVE LJUR TO JUR3                                              ESUP 458
   11       MOVE LCAT TO CAT3                                              ESUP 459
   12       MOVE LPOLL TO POLL3                                            ESUP 460
   13       MOVE LSIC  TO SIC3                                             ESUP 461
   14       MOVE LSITE TO SITE3                                            ESUP 462
   15       MOVE LSTD-NO TO STD-NO3.                                       ESUP 463
01418       GO TO EST-1.                                                   ESUP 464
01419  EST-END.                                                            ESUP 465
01420       IF ZU =      '2' CLOSE ESTAND-FILE-IN,ESTAND-FILE-OUT          ESUP 466
            GO TO PRINT-EST                                                ESUP 467
01503       ELSE                                                           ESUP 468
01504       MOVE '2' TO ZX                                                 ESUP 469
01505       GO TO U5.                                                      ESUP 470
01506  EST-1. EXIT.                                                        ESUP 471
01601  PRINT-ID-EST SECTION.                                               ESUP 472
01604       MOVE LJUR  TO DJUR                                             ESUP 473
01605       MOVE LCAT TO DCAT                                              ESUP 474
01606       MOVE LPOLL TO DPOLL                                            ESUP 475
01607       MOVE LSIC TO DSIC                                              ESUP 476
01608       MOVE LSITE TO DSITE                                            ESUP 477
01610       MOVE LSTD-NO TO DSTD-NO                                        ESUP 478
            PERFORM WRITE-PRINTER                                          ESUP 479
       WRITE-PRINTER SECTION.                                              ESUP 480
            WRITE PRINT-REC FROM PRINT-REC2 AFTER ZV LINES.                ESUP 481
            ADD +1 TO ZW.                                                  ESUP 482
            IF ZW = 48 MOVE '1' TO ZV MOVE 0 TO ZW                         ESUP 483
            ELSE MOVE ' ' TO ZV.                                           ESUP 484
       WP1. EXIT.                                                          ESUP 485
01612  PRINT-ID SECTION.                                                   ESUP 486
01613       MOVE JUR TO DJUR                                               ESUP 487
01614       MOVE CAT TO DCAT                                               ESUP 488
01615       MOVE POLL TO DPOLL                                             ESUP 489
01616       MOVE SIC TO DSIC                                               ESUP 490
01617       MOVE SITE TO DSITE                                             ESUP 491
01619       MOVE STD-NO TO DSTD-NO                                         ESUP 492
            PERFORM WRITE-PRINTER                                          ESUP 493
   01   PRINT-EST SECTION.                                                 ESUP 494
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NOT REPRODUCIBLE

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           OPEN INPUT ESTAND-FILE-OUT.                                  ESUP 495
03         READ ESTAND-FILE-OUT AT END GO TO STOP-RUN1.                 ESUP 496
04         WRITE PRINT-REC FROM RPT-NAME AFTER 0 LINES.                 ESUP 497
05         WRITE PRINT-REC FROM SUB1 AFTER 2 LINES.                     ESUP 498
           MOVE '+' TO ZX.                                              ESUP 499
           MOVE '0' TO ZV.                                              ESUP 500
       P2. READ ESTAND-FILE-OUT AT END GO TO STOP-RUN1.                 ESUP 501
           ADD +1 TO LN-CTR                                             ESUP 502
           IF LN-CTR LESS +49 GO TO P1.                                 ESUP 503
           MOVE 0 TO LN-CTR                                             ESUP 504
           IF ZV NOT EQUAL TO '0'                                       ESUP 505
           WRITE PRINT-REC FROM DASHES AFTER ZX LINES.                  ESUP 506
           WRITE PRINT-REC FROM DASHES AFTER ZV LINES.                  ESUP 507
           MOVE '1' TO ZV.                                              ESUP 508
07         WRITE PRINT-REC FROM SUB2 AFTER 1 LINES.                     ESUP 509
08         WRITE PRINT-REC FROM SUB3 AFTER 1 LINES.                     ESUP 510
09         WRITE PRINT-REC FROM SUB4 AFTER 1 LINES.                     ESUP 511
10         WRITE PRINT-REC FROM DASHES AFTER ZX LINES.                  ESUP 512
       P1.                                                              ESUP 513
12         MOVE NSIC TO PSIC.                                           ESUP 514
13         MOVE NSITE TO PSITE.                                         ESUP 515
14         MOVE NJUR TO PJUR.                                           ESUP 516
15         MOVE NCAT TO PCAT.                                           ESUP 517
16         MOVE NPOLL TO PPOLL.                                         ESUP 518
17         MOVE NSTD-NO TO PSTD-NO.                                     ESUP 519
18         MOVE NALLOW-EM   TO PALLOW-EM.                               ESUP 520
19         MOV. NEXIST-EM TO PEXIST-EM.                                 ESUP 521
           IF NREQ-EFF < 0.0 MOVE 0 TO PREQ-EFF OTHERWISE               ESUP 522
20         COMPUTE PREQ-EFF = NREQ-EFF * 100.                           ESUP 523
01         MOVE NDEV TO PDEV.                                           ESUP 524
02         MOVE NCOST TO PCOST.                                         ESUP 525
03         COMPUTE PSO2-EFF = NSO2-EFF * 100.                           ESUP 526
04         COMPUTE PPART-EFF = NPART-EFF * 100.                         ESUP 527
05         MOVE NCOAL-QUANT TO PCOAL-QUANT.                             ESUP 528
06         MOVE NRES-OIL-QUANT TO PRES-OIL-QUANT.                       ESUP 529
07         MOVE NDIST-OIL-QUANT TO PDIST-OIL-QUANT.                     ESUP 530
08         MOVE NGAS-QUANT TO PGAS-QUANT.                               ESUP 531
09         MOVE NGAS-COOL-FLAG TO PGAS-COOL-FLAG.                       ESUP 532
10         MOVE NERROR-FLAG TO PERROR-FLAG.                             ESUP 533
11         WRITE PRINT-REC FROM DATA-LINE AFTER 1 LINES.                ESUP 534
           GO TO P2.                                                    ESUP 535
       STOP-RUN1.                                                       ESUP 536
           WRITE PRINT-REC FROM DASHES AFTER ZX LINES.                  ESUP 537
15     STOP-RUN.                                                        ESUP 538
16         CLOSE ESTAND-FILE-OUT, PRINT-OUT.                            ESUP 539
17         STOP RUN.                                                    ESUP 540
```

NOT REPRODUCIBLE

PROGRAM NAME RSTRAT (REGIONAL STRATEGY PROGRAM)

PURPOSE

To process emission standards data, as picked in a "stragety," and to provide output summary tables of the emission standards and their effects on the emission rates, costs, and air qulaity.

COMPUTER/LANGUAGE

IBM 360/FORTRAIN IV G Level 18

INPUT

NAMELIST Input (CARD READER)

Strategy Data (CARD READER)

Emission Area Source Data (DISK)

Emission Standard Input (TAPE)

Source Contribution Input (TAPE)

Area Source Emission Reductions (CARD READER)

Projection Factors (CARD READER)

OUTPUT

Emission Standards effects on sources (PRINTER)

Summary by jurisdiction (PRINTER)

Emission Standards effects on ground level concentrations (PRINTER)

Ground Level Concentrations Plot Data (CARD PUNCH)

Statistical Tables (PRINTER)

Projected Emission Inventory and Summary (PRINTER)

Projected Ground Level Concentrations (PRINTER)

Projected Statistical Tables (PRINTER)

Temporary Storage of Controlled Area Source Emissions (TAPE)

Temporary Storage of Controlled Point Source Emissions (TAPE)

PROCEDURE

1. Reads dates and constants from input files
2. Initializes strategy inputs data
3. Reads NAMELIST input
4. Reads area source scale factors if they are input
5. Reads strategy cards and lists them
6. Reads area sources emissions from source file
7. Scales the area source emissions and sums them by political jurisdiction
8. Stores individual area source emissions on temporary file if projectsion are to be output
9. Sets up political jurisdiction loop and calls programs to output emission inventory and summaries, for each political jurisdiction.
10. Then calls receptor routine to calculate new ground level concentrations
11. Calls statistical routine if asked for
12. Calls projection routines to output projected emissions inventory, projected ground level concentrations and projected statistical output if asked for.

SUBROUTINES

SRCTAB - Calculates new source emissions per jurisdiction per category. Writes intermediate file for use in RECOUT

JURSUM - Summarizes source emissions per category for each jurisdiction

SUMMARY - Summarizes source emissions per category for entire region

RECOUT - Calculates new ground level concentrations and punches a plot deck. Outputs projected C.L.C's if reentered for projection

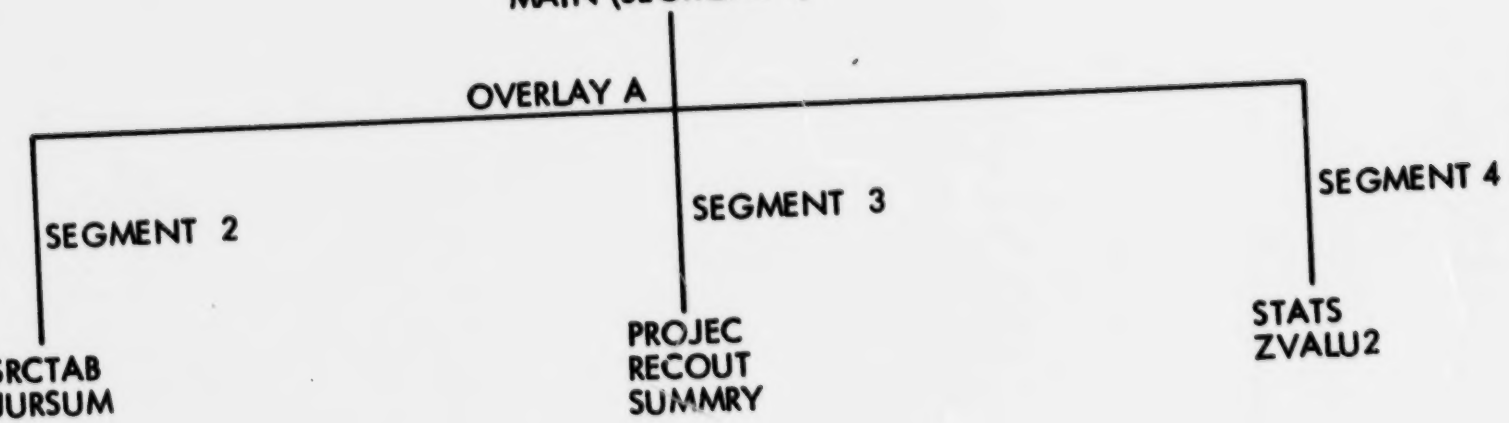
STATS - Calculates statistical and projected statistical output

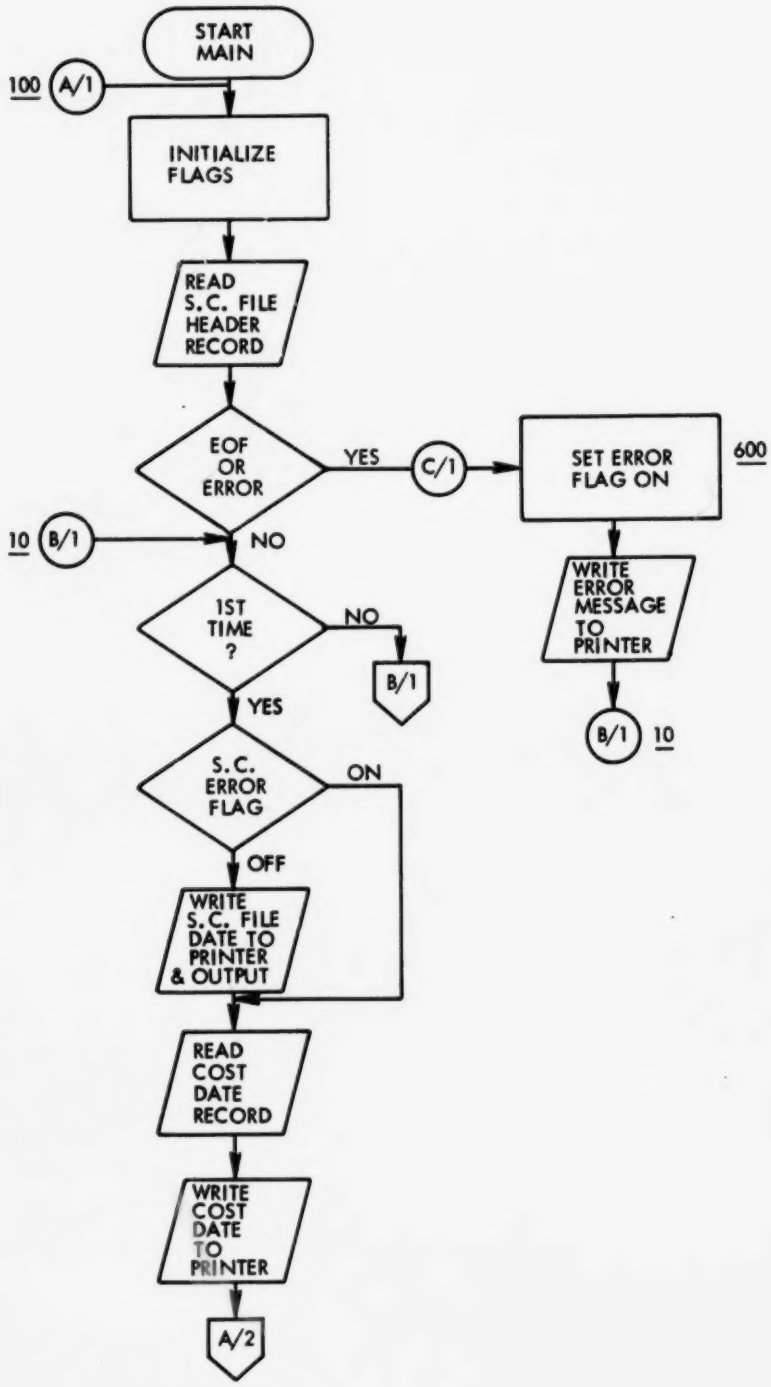
PROJEC - Calculates projected source emission inventory

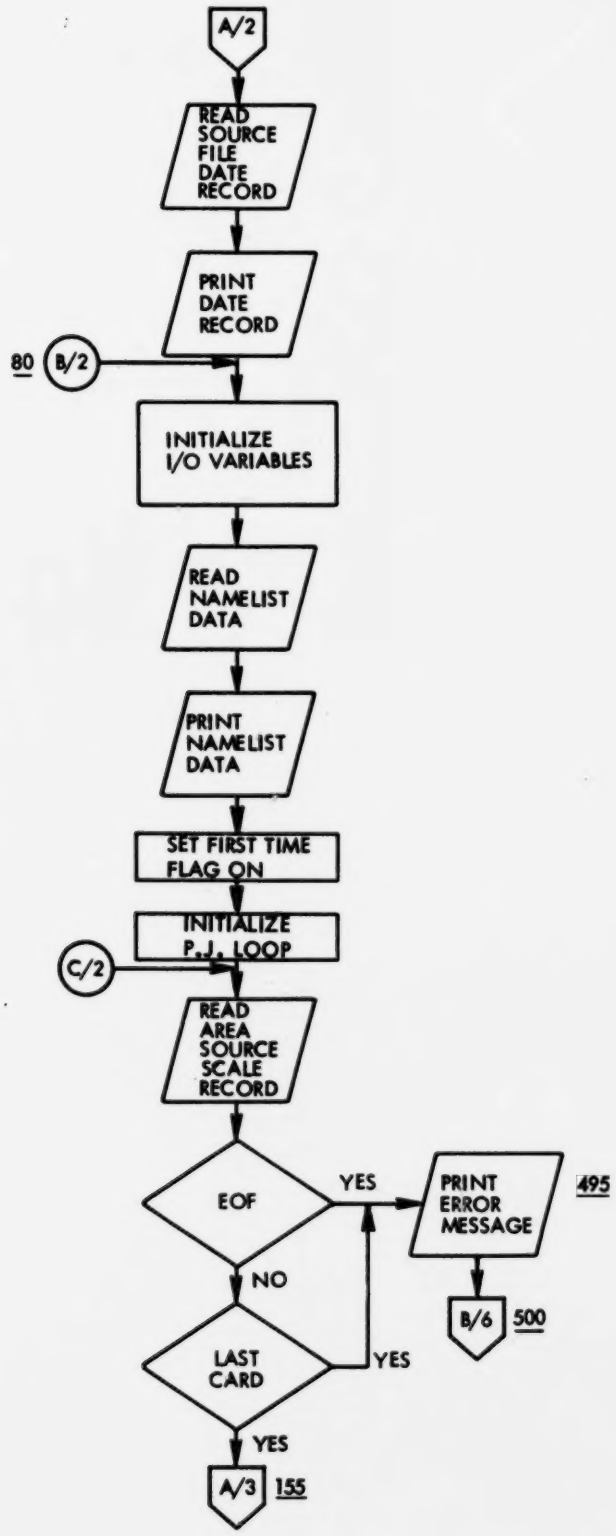
INPUT/OUTPUT VARIABLES

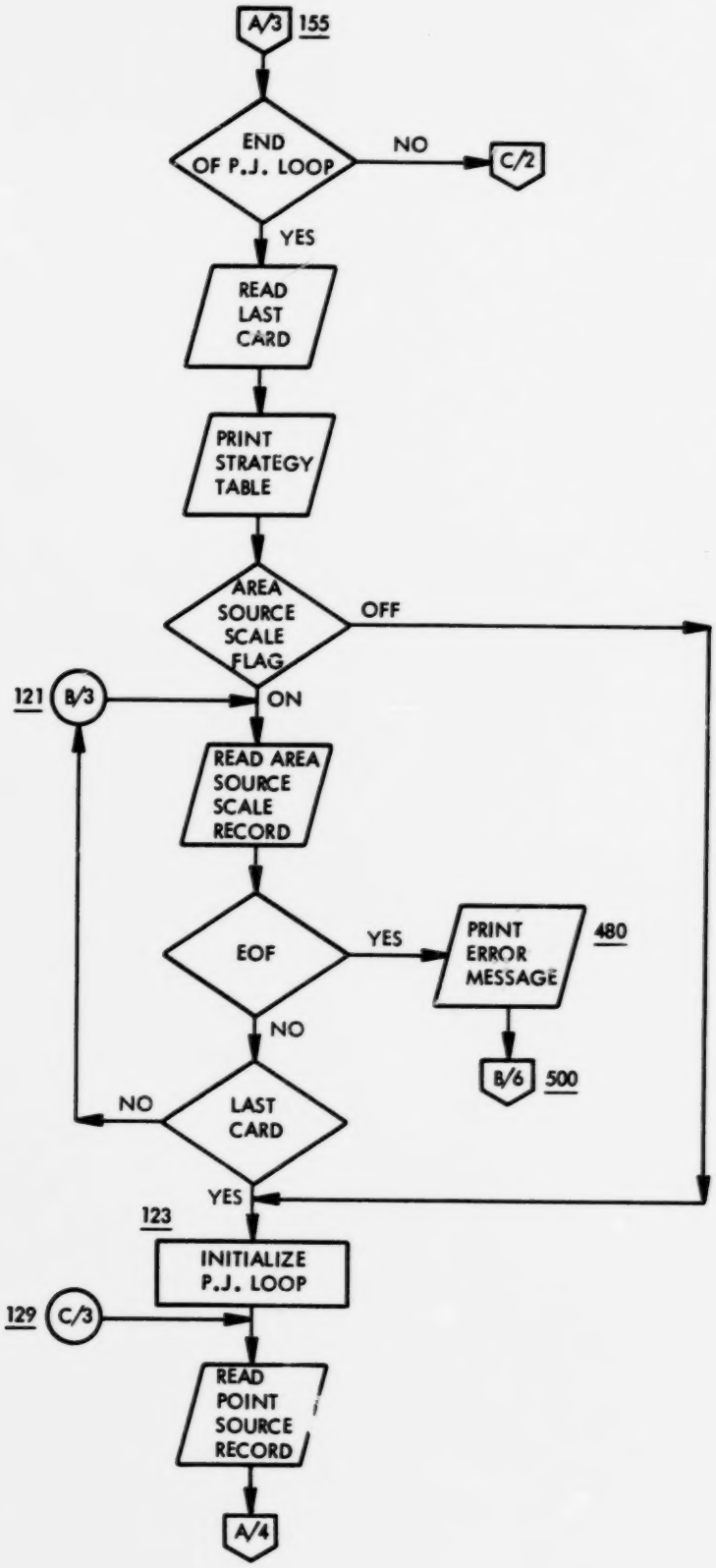
Reference Volume I, Section 7.9, Table 7.9-1.

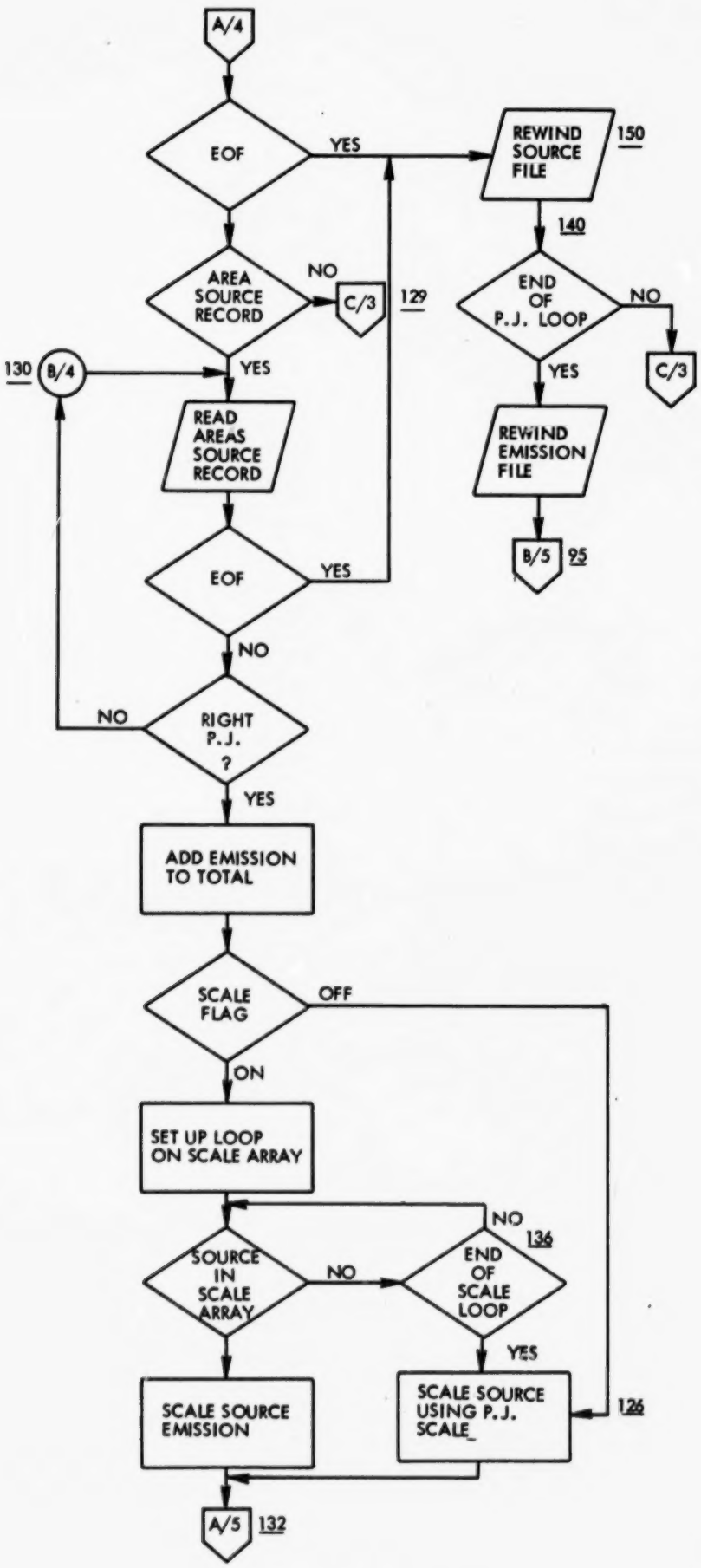
RSTRAT OVERLAY STRUCTURE

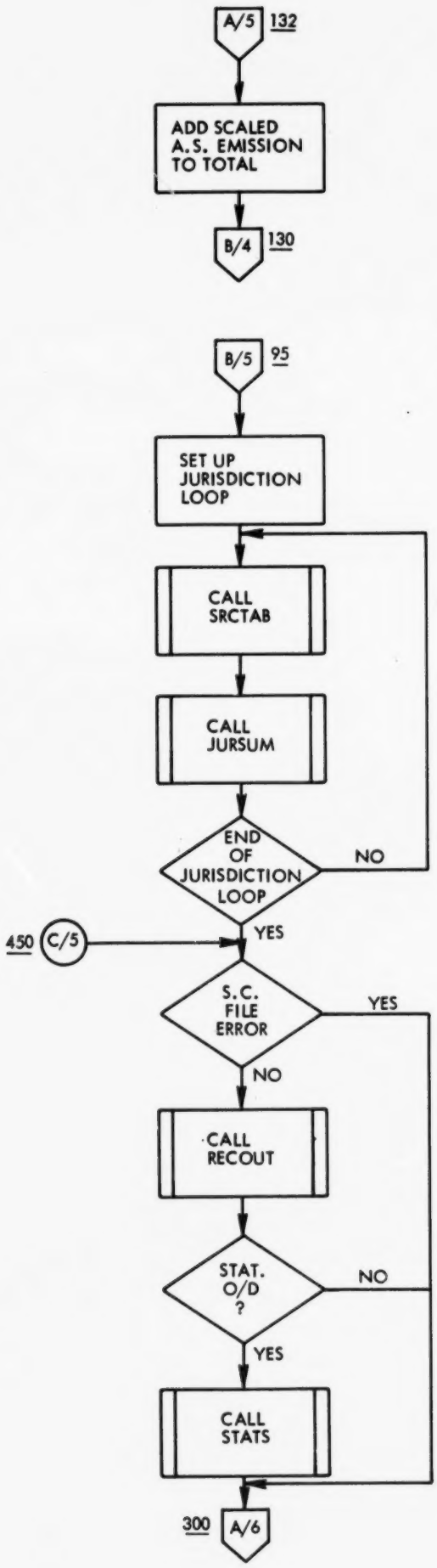



START MAIN
100 A/1
INITIALIZE FLAGS
READ S.C. FILE HEADER RECORD
EOF OR ERROR
YES
C/1
SET ERROR FLAG ON
600
10 B/1
NO
WRITE ERROR MESSAGE TO PRINTER
B/1 10
1ST TIME ?
NO
B/1
YES
S.C. ERROR FLAG
ON
OFF
WRITE S.C. FILE DATE TO PRINTER & OUTPUT
READ COST DATE RECORD
WRITE COST DATE TO PRINTER
A/2


A/2
READ SOURCE FILE DATE RECORD
PRINT DATE RECORD
80 B/2
INITIALIZE I/O VARIABLES
READ NAMELIST DATA
PRINT NAMELIST DATA
SET FIRST TIME FLAG ON
INITIALIZE P.J. LOOP
C/2
READ AREA SOURCE SCALE RECORD
EOF
YES
PRINT ERROR MESSAGE
495
NO
B/6 500
LAST CARD
YES
YES
A/3 155


A/3 155
END OF P.J. LOOP
NO
C/2
YES
READ LAST CARD
PRINT STRATEGY TABLE
AREA SOURCE SCALE FLAG
OFF
121 B/3
ON
READ AREA SOURCE SCALE RECORD
EOF
YES
PRINT ERROR MESSAGE
480
B/6 500
NO
LAST CARD
NO
YES
123
INITIALIZE P.J. LOOP
129 C/3
READ POINT SOURCE RECORD
A/4


A/4
EOF
YES
REWIND SOURCE FILE
150
140
AREA SOURCE RECORD
NO
C/3
129
END OF P.J. LOOP
NO
C/3
130
B/4
YES
YES
READ AREAS SOURCE RECORD
REWIND EMISSION FILE
EOF
YES
B/5
95
NO
NO
RIGHT P.J. ?
YES
ADD EMISSION TO TOTAL
SCALE FLAG
OFF
ON
SET UP LOOP ON SCALE ARRAY
NO
136
SOURCE IN SCALE ARRAY
NO
END OF SCALE LOOP
YES
SCALE SOURCE EMISSION
SCALE SOURCE USING P.J. SCALE
126
A/5
132


A/5 132
ADD SCALED A.S. EMISSION TO TOTAL
B/4 130
B/5 95
SET UP JURISDICTION LOOP
CALL SRCTAB
CALL JURSUM
END OF JURISDICTION LOOP
NO
450 C/5
YES
S.C. FILE ERROR
YES
NO
CALL RECOUT
STAT. O/D ?
NO
YES
CALL STATS
300 A/6

A/6
PROJ. FLAG ?
ON
A/1 100
OFF
CALL SUMMRY
PROJ. WANTED ?
NO
YES
CALL PROJEC
SET PROJ. FLAG ON
C/5 450
B/6 500
REWIND FILES
STOP

```
C   REGION STRATEGY ROUTINES ***MAIN***                                    RSTP   1
C                                                                          RSTP   2
      INTEGER POLNME(3,2)/'SO2 ','    ','    ','PART','ICUL','ATES'/      RSTP   3
      DIMENSION ASEM(2),REGN(18),JDATE(5),KDATE(16),BACKGR(2)              RSTR   4
      COMMON /PROJ/ JSID(2,2000),SCALE(2,2000)                             RSTR   5
      COMMON /SRCE/ ISC(2000),ISIT(2000),ASEM(2000),ICD(2000),HS(2000),    RSTR   6
     +   TEMP(2000),DIA(2000),VEL(2000),EXEM(2000),KSRC,NS                 RSTR   7
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASFAC(10,2),ASCALE(2,500),       RSTR   8
     .             KSID(2,500),IFAC                                        RSTR   9
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),PSTR  10
     .    KFLG(3,10),NREGON,NCAS(3),IPJN(10),ISCERR,NSCALE,IPRJ,NGAS(3) RSTR  11
     ..IG(10),ICS(10),NCS(10)                                              RSTR  12
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUP,IPROJ, DATE(5)        RSTR  13
      COMMON /RCPT/ RECEPT(2),CPOLUT(2),ADSTAN(2),UTM(2),SOURCE(2),        RSTR  14
     . SO2CAL(2),PARCAL(2)                                                 RSTR  15
      COMMON /SRCCON/ BKGRND(2),ASPRJ(10,2),SCONTR(2)                      RSTR  16
      COMMON /SUMS/ SCONEM(3),SEXEM(3),RCON(3),AVRGLC(2),SFOTY(4),         RSTR  17
     1 ITNSRC(10),ITNCON(10),TSEXEM(10),TSCOST(10),SCOSTI(3),TEMRED(10),RSTP  18
     . TFOTY(4),SAEM(3),TSAEM(10)                                          RSTR  19
      COMMON /STAT/ SO2AVG(3),PARAVG(3),SGDS(12),SGDP(12),ISTATS(12),      RSTR  20
     1       ISTATP(12),NSEL12,SO2PER(3),PARPER(3),XP(2,12),ICNT12         RSTR  21
C                                                                          RSTR  22
      EQUIVALENCE (BKGRND(1),BACKGR(1))                                    RSTR  23
      DATA REGN  /18*'    '/                                               RSTR  24
      NAMELIST/RSTAT/ ADSTAN,ASFAC,IPUNCH,ISTATP,ISTATS,NSEL12,PARAVG,     RSTR  25
     .                IFAC,PARCAL,PARPER,REGION,SGDP,SGDS,SO2AVG,SO2CAL,RSTR  26
     .                SO2PER,UTM,IPROJ,IJUP,NREGON,DATE,ASPRJ,BACKGR      RSTR  27
      IORIGN = 0                                                           RSTR  28
          IEND = 3                                                         RSTR  29
  100 CONTINUE                                                             RSTR  30
      REWIND  8                                                            RSTR  31
      REWIND 10                                                            RSTR  32
      ISCERR = 0                                                           RSTR  33
      REWIND 12                                                            RSTR  34
          IPRJ = 0                                                         RSTR  35
          IFAC = 0                                                         RSTR  36
      IPROJ = 0                                                            RSTR  37
      KSRC = 0                                                             RSTR  38
      WRITE (6,1)                                                          RSTR  39
    1 FORMAT('1')                                                          RSTR  40
      READ(10,END=600,ERR=600) NRECEP,NSORCE,(JDATE(I),I=1,5),             RSTR  41
     .(BKGRND(I),I=1,2),SO2CAL(1),PARCAL(1),SO2CAL(2),PARCAL(2)            RSTR  42
   10 CONTINUE                                                             RSTR  43
      IF (IORIGN .EQ. 1) GO TO 80                                          RSTR  44
          IORIGN = 1                                                       RSTR  45
      IF(ISCERR .EQ. 1) GO TO 20                                           RSTR  46
      WRITE(6,5555) JDATE                                                  RSTR  47
 5555 FORMAT(T5,'SOURCE CONTRIBUTION FILE DATE ',5A4)                      RSTR  48
   20 READ (9) K,K,K,(JDATE(I),I=1,5),(JDATE(I),I=1,5)                    RSTR  49
      WRITE(6,903) JDATE                                                   RSTR  50
  903 FORMAT('0',T5,'EMISSION STANDARD FILE DATE ',5A4)                    RSTR  51
C                                                                          RSTR  52
C  READ SOURCE FILE DATE RECORD AND WRITE IT.                              RSTR  53
      READ(11,904) KDATE                                                   RSTR  54
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NOT REPRODUCIBLE

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  904 FORMAT(1H1,A1,19X)                                                RSTR  55
      WRITE(6,907) KDATE                                                RSTR  56
  907 FORMAT('0',T5,'SOURCE FILE ',15A4,A1//)                           RSTR  57
      WRITE (6,1)                                                       RSTR  58
   80 CONTINUE                                                          RSTR  59
          IPUNCH = 0                                                    RSTR  60
      NSEL12 = 0                                                        RSTR  61
      DO 75  N=1,4                                                      RSTR  62
   75     TFQTY(N) = 0.0                                                RSTR  63
      DO 90 N= 1,2                                                      RSTR  64
      CPOLUT(N) = 0.0                                                   RSTR  65
      UTM(N) = 0.                                                       RSTR  66
      AQSTAN(N) = 0.0                                                   RSTR  67
      DO 85 NN = 1,10                                                   RSTR  68
          ASPRJ(NN,N) = 1.0                                             RSTR  69
   85     ASFAC(NN,N) = 1.0                                             RSTR  70
      DO 90 NN=1,10                                                     RSTR  71
      TEXAR(N,NN)= 0.0                                                  RSTR  72
      TCAR(N,NN) = 0.0                                                  RSTR  73
   90 CONTINUE                                                          RSTR  74
      DO 105 N=1,3                                                      RSTR  75
      SO2AVG(N) = 0.                                                    RSTR  76
      PARAVG(N) = 0.                                                    RSTR  77
      PARPER(N) = 0.                                                    RSTR  78
      SO2PER(N) = 0.                                                    RSTR  79
  105 CONTINUE                                                          RSTR  80
      DO 115 N=1,12                                                     RSTR  81
      ISTATS(N) = 0                                                     RSTR  82
      ISTATP(N) = 0                                                     RSTR  83
      SGDP(N) = 0                                                       RSTR  84
      SGDS(N) = 0                                                       RSTR  85
  115 CONTINUE                                                          RSTR  86
      DO 120 N=1,18                                                     RSTR  87
      REGION(N) = REGN(N)                                               RSTR  88
  120 CONTINUE                                                          RSTR  89
C     READ NAMELIST DATA                                                RSTR  90
      READ (5,RSTRT,END=500)                                            RSTR  91
      WRITE(6,RSTRT)                                                    RSTR  92
C                                                                       RSTR  93
      IORIGN = 1                                                        RSTR  94
C     READ STRATEGY CARD                                                RSTR  95
      DO 155 M=1,IJUR                                                   RSTR  96
      READ(5,900,END=495)    IPOL,IPJN(M),(KREG(N,M),N=1,3),            RSTR  97
     .(PJNAME(N,M),N=1,5)                                               RSTR  98
  900 FORMAT(5I3,5X,5A4)                                                RSTR  99
      IF(IPOL    .EQ. 0) GO TO 495                                      RSTR 100
  155 CONTINUE                                                          RSTR 101
      READ(5,900) M                                                     RSTR 102
      WRITE (6,901) REGION,(POLNME(N,IPOL),N=1,3),DATE                  RSTR 103
  901 FORMAT('1',T7,18A4//T24,'INPUT CONTROL STRATEGY'//T9,'POLLUTANT: 'RSTR 104
     .,3A4,T58,5A4)                                                     RSTR 105
      WRITE (6,914)                                                     RSTR 106
  914 FORMAT('0',T9,17('____')/    T9,'|',T76,'|'/T9,'|',T50,'EMISSION SRSTR 107
     .TANDARD',T76,'|',/'+',T40,9('____')/T9,'|',T20,'POLITICAL',T43,'FURSTR 108
     .EL',T55,'INDUSTRIAL',T70,'SOLID',T76,'|'/T9,'|',T17,'JURISDICTION'RSTR 109
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     .,T40,'COMBUSTION',T56,'PROCESS',T70,'WASTE',T76,'|'/'+',T11,6('___RSTR 110
     .-'),T40,10('-'),T55,10('-'),T70,'----',T76,'|'/T9,'|',T76,'|')     RSTR 111
      DO 160 N=1,IJUR                                                    RSTR 112
      WRITE (6,915) N,(PJNAME(J,N),J=1,5),(KREG(J,N),J=1,3)              RSTR 113
  915 FORMAT(' ',T9,'|',T11,I2,T15,5A4,T44,I2,T59,I2,T71,I2,T76,'|'/T9,'RSTR 114
     .|',T76,'|')                                                        RSTR 115
  160 CONTINUE                                                           RSTR 116
      WRITE(6,911)                                                       RSTR 117
  911 FORMAT('+',T9,17('____'))                                          RSTR 118
      IF (IFAC .EQ. 0) GO TO 123                                         RSTR 119
          NN = 1                                                         RSTR 120
      WRITE(6,222)                                                       RSTR 121
  222 FORMAT('1',T10,'AREA SOURCE SCALE FACTORS'//)                      RSTR 122
  121 READ(5,908,END=480)NRGN,(KSID(I,NN),I=1,2),(ASCALE(I,NN),I=1,2)    RSTR 123
  908 FORMAT(I3,I4,I5,2F7.2)                                             RSTR 124
      WRITE(6,223) (KSID(I,NN),I=1,2),ASCALE(IPOL,NN)                    RSTR 125
  223 FORMAT(' ',T10,I4,I5,2X,F7.2)                                      RSTR 126
          NN = NN + 1                                                    RSTR 127
      IF (NRGN .NE. 0) GO TO 121                                         RSTR 128
  123     NSCALE = NN - 1                                                RSTR 129
      DO 140 L=1,IJUR                                                    RSTR 130
  129 CONTINUE                                                           RSTR 131
      READ(11,909,END=150) KSIC,KSITE                                    RSTR 132
  909 FORMAT(3X,I4,I5,200X, 9X)                                          RSTR 133
      IF(KSIC .NE. 9999 .AND. KSITE .NE. 0) GO TO 129                    RSTR 134
C                                                                        RSTR 135
C  READ SOURCE EMISSION FILE FOR AREA SOURCES AND                        RSTR 136
C   AND COMPUTE TOTAL EXISTING AREA SOURCE EMISSIONS AND                 RSTR 137
C   TOTAL CONTROLLED AREA SOURCE EMISSIONS                               RSTR 138
C                                                                        RSTR 139
  130 CONTINUE                                                           RSTR 140
      READ(11,905,END=150) KREGON,KSIC,KSITE,KPJN,ASEM                   RSTR 141
  905 FORMAT(I3,I4,I5,13X,I2,7X,2F7.3)                                   RSTR 142
      IF(KPJN .NE. L) GO TO 130                                          RSTR 143
C  SCALE AREA SOURCES AND SAVE IF PROJECTIONS WANTED.                    RSTR 144
C                                                                        RSTR 145
          TEXAR(IPOL    ,L) = TEXAR(IPOL    ,L) + ASEM(IPOL)             RSTR 146
      IF(IFAC .EQ. 0) GO TO 126                                          RSTR 147
      DO 136 NN=1,NSCALE                                                 RSTR 148
      IF(KSITE .NE. KSID(2,NN)) GO TO 136                                RSTR 149
          ASNEW = ASEM(IPOL)  *   ASCALE(IPOL    ,NN)                   RSTR 150
      GO TO 132                                                          RSTR 151
  136 CONTINUE                                                           RSTR 152
  126     ASNEW = ASEM(IPOL)  *  ASFAC(L,IPOL)                           RSTR 153
  132     TCAR(IPOL    ,L) = TCAR(IPOL    ,L) + ASNEW                    RSTR 154
      IF(IPROJ .EQ. 0) GO TO 130                                         RSTR 155
      WRITE (8) KSIC,KSITE,L,ASNEW,ASEM(IPOL)                            RSTR 156
       GO TO 130                                                         RSTR 157
C                                                                        RSTR 158
  150 CONTINUE                                                           RSTR 159
      REWIND 11                                                          RSTR 160
      READ (11,906)                                                      RSTR 161
  906 FORMAT(80X)                                                        RSTR 162
  140 CONTINUE                                                           RSTR 163
      REWIND 8                                                           RSTR 164
```

```
   95 CONTINUE                                                          RSTR 165
      DO 400 IPJ=1,NJUR                                                 RSTR 166
      ICS(IPJ) = 0                                                      RSTR 167
      NCS(IPJ) = 0                                                      RSTR 168
      DO 410 N=1,3                                                      RSTR 169
  410     NGAS(N) = 0                                                   RSTR 170
C  LIST SOURCE EMISSION OUTPUT FOR EACH REGULATION                      RSTR 171
          CALL SRCTAB                                                   RSTR 172
C                                                                       RSTR 173
C  LIST JURISDICTION SUMMARY DATA                                       RSTR 174
C                                                                       RSTR 175
          CALL JURSUM                                                   RSTR 176
  400 CONTINUE                                                          RSTR 177
  450 CONTINUE                                                          RSTR 178
      REWIND 12                                                         RSTR 179
C                                                                       RSTR 180
C  LIST G.L.C. PER RECEPTOR FOR COMBINED REGULATIONS                    RSTR 181
      IF(ISCERR .EQ. 1) GO TO 300                                       RSTR 182
      CALL  RECOUT                                                      RSTR 183
C  IF STATISTICAL OUTPUT WANTED CALL STATS                              RSTR 184
C                                                                       RSTR 185
      IF (NSEL12 .EQ. 0) GO TO 300                                      RSTR 186
C                                                                       RSTR 187
          CALL  STATS                                                   RSTR 188
  300 CONTINUE                                                          RSTR 189
C                                                                       RSTR 190
      IF (IPRJ .GT. 0) GO TO 100                                        RSTR 191
      CALL SUMMRY                                                       RSTR 192
      REWIND 9                                                          RSTR 193
      READ (9)  (KDATE(NN),NN=1,3)                                      RSTR 194
      IF (IPROJ .EQ. 0) GO TO 100                                       RSTR 195
      CALL PROJEC                                                       RSTR 196
          IPRJ = IPROJ                                                  RSTR 197
      GO TO 450                                                         RSTR 198
  600 ISCERR = 1                                                        RSTR 199
      WRITE (6,912)                                                     RSTR 200
  912 FORMAT('0**RST02- ERROR READING APC SOURCE CONTRIBUTION DATA- NO APSTR 201
     .IR QUALITY OUTPUT.',57X)                                          RSTR 202
          GO TO 10                                                      RSTR 203
C                                                                       RSTR 204
C  INPUT ERROR- AREA SOURCE SCALE DATA MISSING.                         RSTR 205
C                                                                       RSTR 206
  480 WRITE(6,916)                                                      RSTR 207
  916 FORMAT('1**RST05- AREA SOURCE SCALE DATA MISSING-RUN TERMINATED.')RSTR 208
      GO TO 500                                                         RSTR 209
C                                                                       RSTR 210
C  INPUT ERROR STRATEGY DATA MISSING                                    RSTR 211
C                                                                       RSTR 212
  495     WRITE (6,902)                                                 RSTR 213
  902 FORMAT('1**RST01- STRATEGY DATA MISSING- RUN TERMINATED.',85X)     RSTR 214
C                                                                       RSTR 215
  500 CONTINUE                                                          RSTR 216
      REWIND 9                                                          RSTR 217
      REWIND 11                                                         RSTR 218
      STOP                                                              RSTR 219
      END                                                               RSTR 220
```

Subprogram Name

SRCTAB

Purpose

To calculate new source emissions per jurisdiction per category. Writes intermediate file for use in RECOUT.

Calling Sequence

CALL SRCTAB

Computer Language

IBM 360 - FORTRAN IV G LEVEL 18

Input

1. Emission Standard Output File (Tape).

Output

1. Emission Standard Effects on Source Emissions (Printer)
2. Intermediate File for RECOUT (Tape).

Subroutines

None

Procedure

1. Reads an Estand file record for the pollutant, P.J., category, standard wanted.
2. Write intermediate tape for RECOUT.
3. Writes an emission inventory report per P.J.
4. Do 1 through 3 for all sources in P.J.

Input/Output Variables

Input

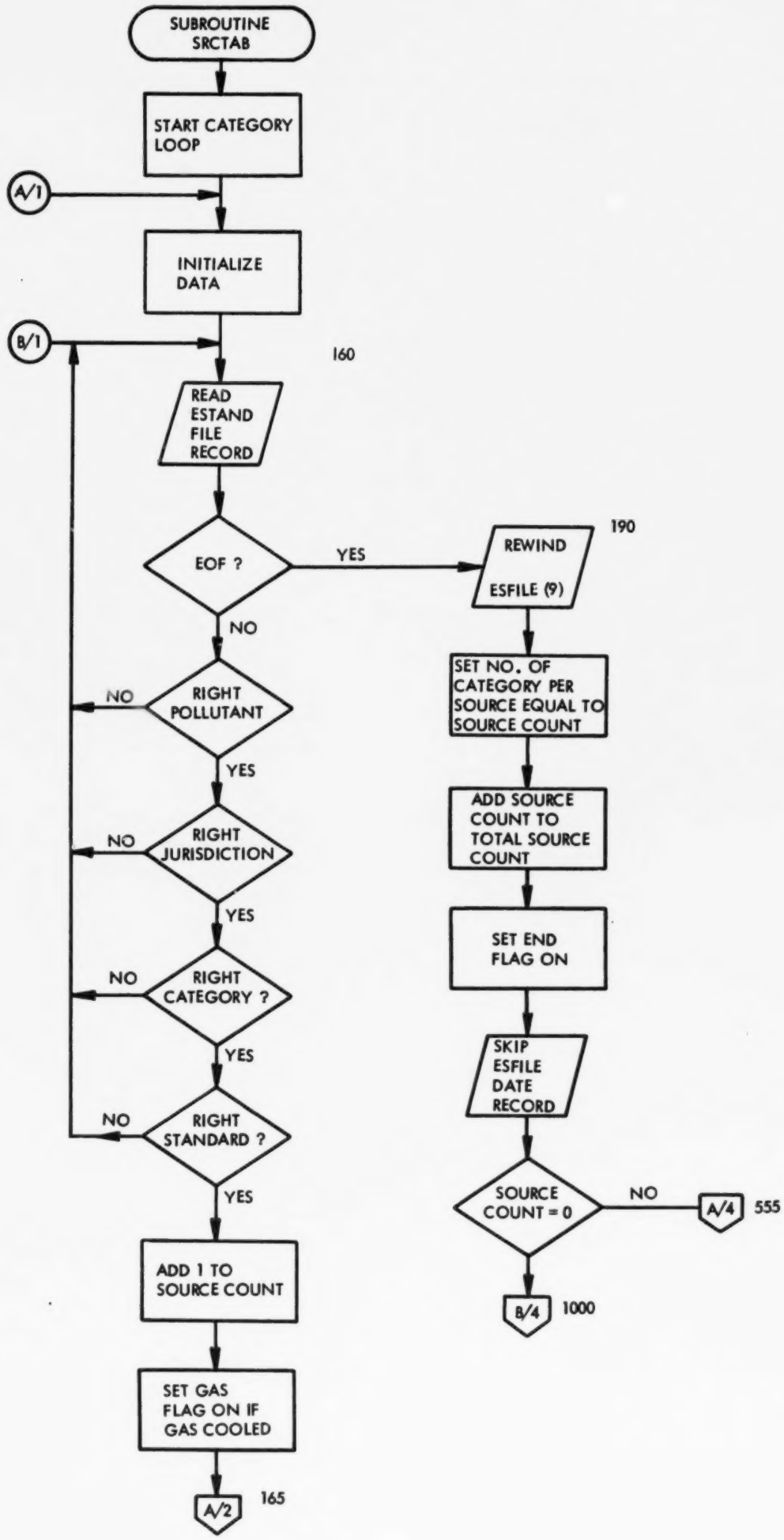
Emission Standard Output File

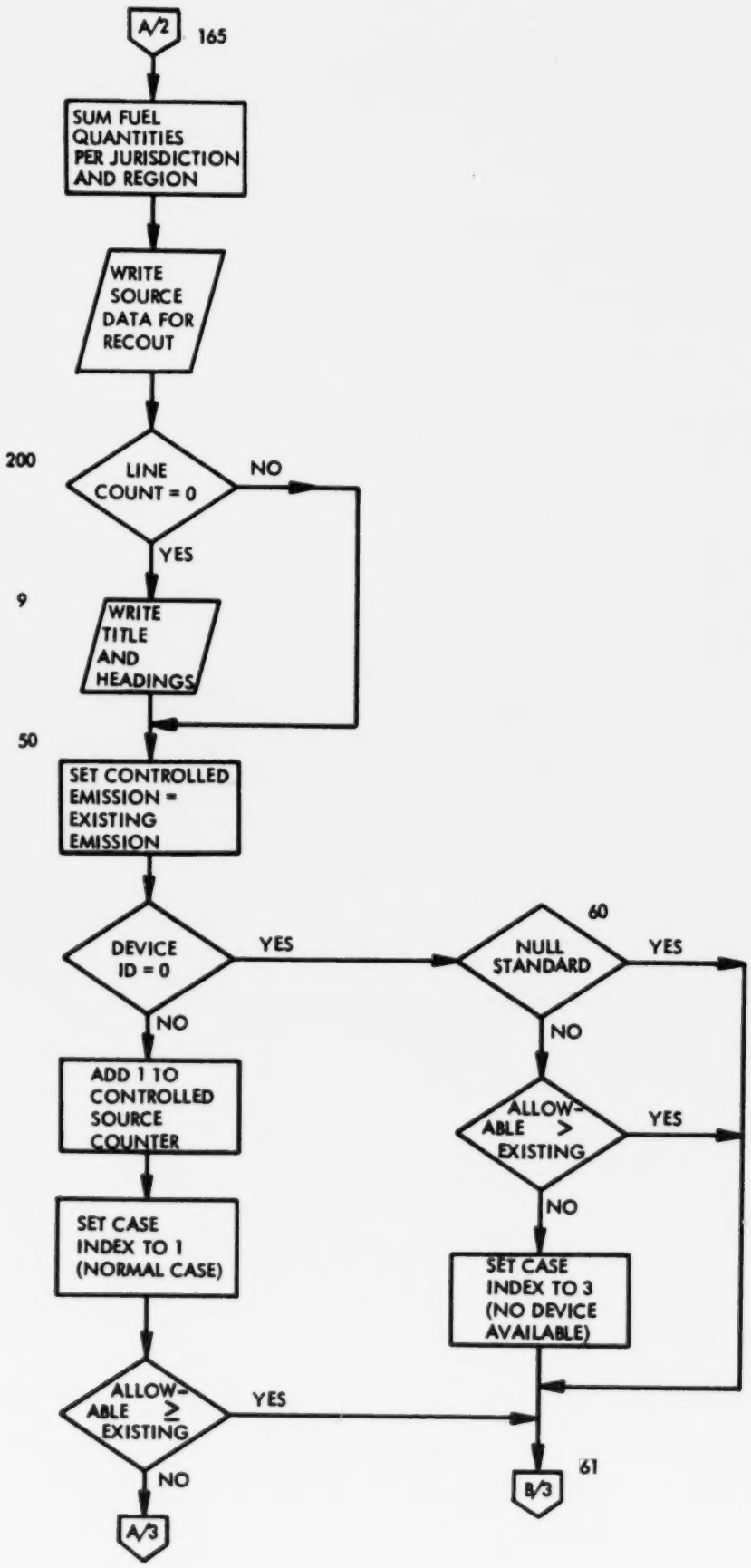
Variable Name	Description	Format
IREGON	Region Number	Binary
ISIC	SIC Number	Binary
ISITE	Site/Process Number	Binary
ICID	Device ID	Binary
COSTI	Device Cost	Fl. Pt.
EFF (J),J=1,2	Device efficiency 1 - SO2 2 - Particulate	Fl. Pt.
AEM	Allowable Emission	Fl. Pt.
EXEM	Existing Emission	Fl. Pt.
REFF	Required Efficiency	Fl. Pt.
FQN (J), J=1,4	Fuel Quantities	Fl. Pt.
IGAS	Cooled Gas Flag	Binary
IPL	Pollutant Number	Binary
JURIS	Political Jurisdiction	Binary
ICL	Category Number	Binary
IREG	Standard Number	Binary
IFLAG	Error Flag	Binary

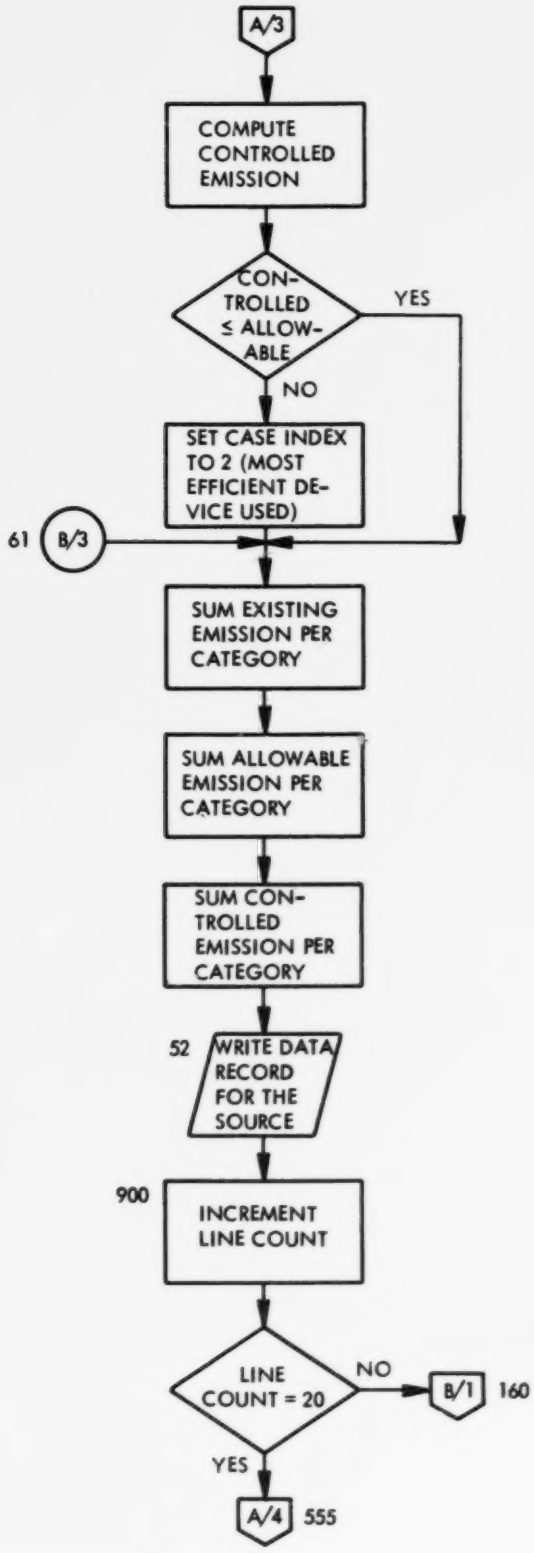
Output

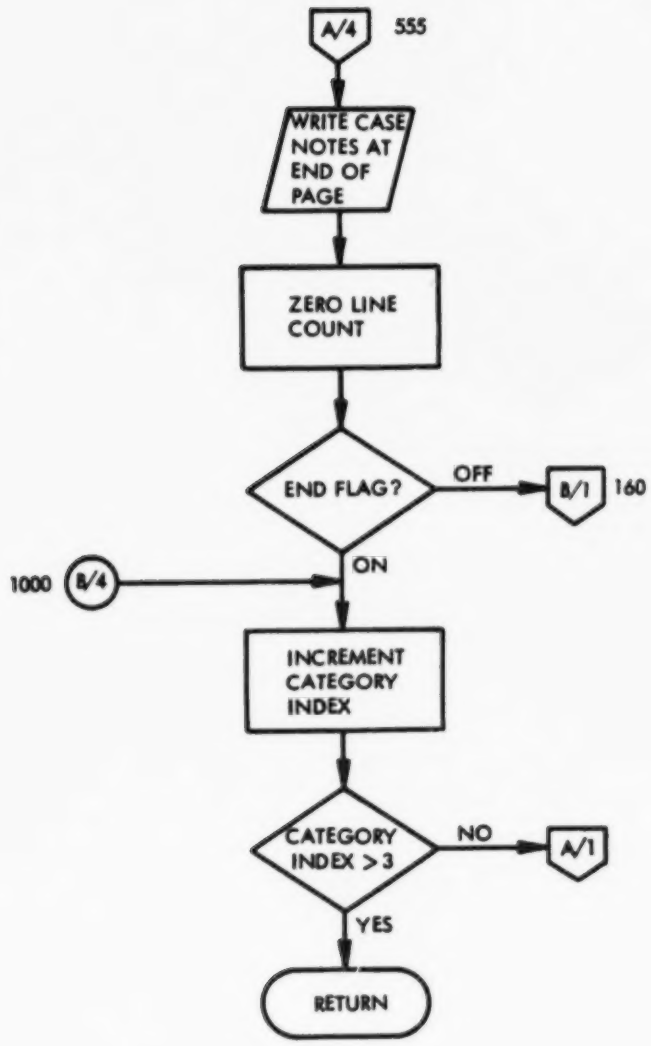
Intermediate File for RECOUT

Variable Name	Description	Format
IREGON	Region Number	Binary
ISIC	SIC Number	Binary
ISITE	Site/Process Number	Binary
ICID	Device Number	Binary
IPJ	Political Jurisdiction	Binary
AEM	Allowable Emission	Fl. Pt.
EXEM	Existing Emission	Fl. Pt.


SUBROUTINE SRCTAB
START CATEGORY LOOP
A/1
INITIALIZE DATA
B/1
160
READ ESTAND FILE RECORD
EOF ?
YES
190
REWIND ESFILE (9)
NO
SET NO. OF CATEGORY PER SOURCE EQUAL TO SOURCE COUNT
NO
RIGHT POLLUTANT
ADD SOURCE COUNT TO TOTAL SOURCE COUNT
YES
NO
RIGHT JURISDICTION
SET END FLAG ON
YES
NO
RIGHT CATEGORY ?
SKIP ESFILE DATE RECORD
YES
NO
RIGHT STANDARD ?
SOURCE COUNT = 0
NO
A/4
555
YES
ADD 1 TO SOURCE COUNT
B/4
1000
SET GAS FLAG ON IF GAS COOLED
A/2
165


A/2
165
SUM FUEL QUANTITIES PER JURISDICTION AND REGION
WRITE SOURCE DATA FOR RECOUT
200
LINE COUNT = 0
NO
YES
9
WRITE TITLE AND HEADINGS
50
SET CONTROLLED EMISSION = EXISTING EMISSION
DEVICE ID = 0
YES
60
NULL STANDARD
YES
NO
ALLOW-ABLE > EXISTING
YES
NO
ADD 1 TO CONTROLLED SOURCE COUNTER
SET CASE INDEX TO 1 (NORMAL CASE)
SET CASE INDEX TO 3 (NO DEVICE AVAILABLE)
ALLOW-ABLE ≥ EXISTING
YES
NO
61
B/3
A/3


A/3
COMPUTE CONTROLLED EMISSION
CON-TROLLED ≤ ALLOW-ABLE
YES
NO
SET CASE INDEX TO 2 (MOST EFFICIENT DE-VICE USED)
61
B/3
SUM EXISTING EMISSION PER CATEGORY
SUM ALLOWABLE EMISSION PER CATEGORY
SUM CON-TROLLED EMISSION PER CATEGORY
52
WRITE DATA RECORD FOR THE SOURCE
900
INCREMENT LINE COUNT
LINE COUNT = 20
NO
B/1
160
YES
A/4
555


A/4
555
WRITE CASE NOTES AT END OF PAGE
ZERO LINE COUNT
END FLAG?
OFF
B/1
160
ON
1000
B/4
INCREMENT CATEGORY INDEX
CATEGORY INDEX > 3
NO
A/1
YES
RETURN

```
      SUBROUTINE SRCTAB                                                 SRCT   1
                                                                        SRCT   2
      SOURCE EMISSION TABLE PROGRAM                                     SRCT   3
                                                                        SRCT   4
      COMMON /SRCE/ ISC(2000),ISIT(2000),AEMI(2000),ICD(2000),HS(2000), SRCT   5
     +   TEMP(2000),DIA(2000),VEL(2000),EXEMI(2000),KSRC,NS             SRCT   6
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASFAC(10,2),ASCALE(2,500),    SRCT   7
     .            KSID(2,500),IFAC                                     SRCT   8
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),SRCT   9
     .    KREG(3,10),NREGON,NCAS(3),IPJN(10),ISCERR,NSCALE,IPRJ,NGAS(3) SRCT  10
     .,IG(10)                                                           SRCT  11
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)     SRCT  12
      COMMON /RCPT/ RECEPT(2),CPOLUT(2),AQSTAN(2),UTM(2),SOURCE(2),     SRCT  13
     . SO2CAL(2),PARCAL(2)                                              SRCT  14
      COMMON /SRCCON/ BKGRND(2),ASPRJ(10,2),SCONTR(2)                   SRCT  15
      COMMON /STAT/ AVRGTM(3,2),STANDV(12,2),ISEL12(12,2),NSEL12,       SRCT  16
     1              PERCNT(3,2),XP(2,12),ICNT12                         SRCT  17
      COMMON /SUMS/ SCONEM(3),SEXEM(3),NCON(3),AVRGLC(2),SFQTY(4),      SRCT  18
     1 ITNSRC(10),ITNCON(10),TSEXEM(10),TSCOST(10),SCOSTI(3),TEMRED(10),SRCT  19
     . TFQTY(4),SAEM(3),TSAEM(10)                                       SRCT  20
      DIMENSION NAME1(5,3),NAME2(6,2),LCAS(3),EFF(2),GCAS(2),FQN(4)     SRCT  21
      DATA LCAS/'    ','*   ','**  '/,GCAS/' ','G'/                     SRCT  22
      DATA NAME1/'    ',' FUE','L CO','MBUS','TION',                    SRCT  23
     1           '  IN','DUST','RIAL',' PRO','CESS',                    SRCT  24
     2           'SOLI','D WA','STE ','DISP','OSAL'/                    SRCT  25
      DATA NAME2/' SUL','FUR ','DIOX','IDE ','CONT','ROL ',            SRCT  26
     1           ' PAR','TICU','LATE',' CON','TROL','    '/             SRCT  27
C                                                                       SRCT  28
      AVRGLC(IPOL) = 0.0                                                SRCT  29
          IG(IPJ) = 0                                                   SRCT  30
      DO  5 I=1,4                                                       SRCT  31
    5 SFQTY(I) = 0.0                                                    SRCT  32
      DO 1000 I=1,IEND                                                  SRCT  33
          IGFLG = 0                                                     SRCT  34
      K = 0                                                             SRCT  35
      NDFLG = 0                                                         SRCT  36
      NCON(I) = 0                                                       SRCT  37
      SCOSTI(I)=0.                                                      SRCT  38
      SCONEM(I) = 0.0                                                   SRCT  39
          SAEM(I) = 0.                                                  SRCT  40
      SEXEM(I)= 0.                                                      SRCT  41
      NCAS(I) = 0                                                       SRCT  42
      ICASE(I)= 0                                                       SRCT  43
      IF(KREG(I,IPJ) .EQ. 0) GO TO 1000                                 SRCT  44
      LINES=0                                                           SRCT  45
C                                                                       SRCT  46
C     READ REGULATED SOURCE/DEVICE DATA                                 SRCT  47
C                                                                       SRCT  48
  160 CONTINUE                                                          SRCT  49
      READ (9,END=190) IREGON,ISIC,ISITE,ICID,COSTI,(EFF(J),J=1,2),AEM, SRCT  50
     .    EXEM,REFF,(FQN(J),J=1,4),IGAS,IPL,JURIS,ICL,IREG,IFLAG        SRCT  51
      IF (IPL .NE. IPOL) GO TO 160                                      SRCT  52
      IF (IPJ  .NE. JURIS) GO TO 160                                    SRCT  53
      IF (ICL .NE. I) GO TO 160                                         SRCT  54
```

```
      IF(IREGION(I,IPJ) .NE. IREG) GO TO 160                                SRCT  55
      K = K +1                                                              SRCT  56
      IF(IGAS .EQ. 0 .OR. IGFLG .EQ. 1) GO TO 165                           SRCT  57
          IG(IPJ) = 1                                                       SRCT  58
          IGFLG = 1                                                         SRCT  59
          NGAS(I) = 1                                                       SRCT  60
  165 CONTINUE                                                              SRCT  61
      DO 180 N=1,4                                                          SRCT  62
          SFQTY(N) = SFQTY(N) + FQN(N)                                      SRCT  63
  180     TFQTY(N) = TFQTY(N) + FQN(N)                                      SRCT  64
      WRITE (12)     IREGON,ISIC,ISITE,ICID,IPJ,AEM,EXEM                    SRCT  65
      GO TO 200                                                             SRCT  66
  190     REWIND 9                                                          SRCT  67
      NSRC(I) = K                                                           SRCT  68
      KSRC = KSRC + K                                                       SRCT  69
      NDFLG = 1                                                             SRCT  70
      READ (9) KDATE                                                        SRCT  71
      IF (K .EQ. 0) GO TO 1000                                              SRCT  72
      GO TO 555                                                             SRCT  73
  200 CONTINUE                                                              SRCT  74
C                                                                           SRCT  75
C     WRITE TITLE AND HEADINGS                                              SRCT  76
C                                                                           SRCT  77
      IF (LINES.EQ.0) GO TO 9                                               SRCT  78
      GO TO 50                                                              SRCT  79
    9 WRITE (6,9000) REGION, DATE                                           SRCT  80
 9000 FORMAT('1',T33,18A4,T112,5A4//)                                       SRCT  81
      WRITE(6,10)(NAME1(J,I),J=1,5),KREG(I,IPJ),(NAME2(J,IPOL),J=1,6)       SRCT  82
     1   ,(PJNAME(J,IPJ),J=1,5)                                             SRCT  83
   10 FORMAT(T42,'E M I S S I O N  S T A N D A R D  E F F E C T S  O N'/SRCT  84
     ./T52,'S O U R C E  E M I S S I O N S'///T36,5A4,' STANDARD',I3,' FSRCT  85
     .OR ',6A4/T51,5A4,' JURISDICTION'/)                                    SRCT  86
C                                                                           SRCT  87
C     WRITE UNDERLINE                                                       SRCT  88
C                                                                           SRCT  89
      WRITE (6,11)                                                          SRCT  90
   11 FORMAT('+',T9,29('____'))                                             SRCT  91
      WRITE (6,12)                                                          SRCT  92
   12 FORMAT(T9,'|',T18,'|',T23,'|',T28,'|',T37,'|',T53,'|',T69,'|',T85,SRCT  93
     .    '|',T124,'|')                                                    SRCT  94
      WRITE (6,13)                                                          SRCT  95
   13 FORMAT(T9,'|',T12,'SIC',T18,'|',T19,'SITE',T23,'|',T24,'PROC',T28,SRCT  96
     .'|',T30,'DEVICE',                                                    SRCT  97
     .T37,'|',T42,'ANNUAL',T53,'|',T59,'DEVICE',T69,'|',T74,'REQUIRED', SRCT  98
     .T85,'|',T92,'EMISSIONS (TONS/DAY)',T124,'|')                         SRCT  99
      WRITE (6,12)                                                          SRCT 100
      WRITE (6,14)                                                          SRCT 101
   14 FORMAT(T9,'|',T12,'CODE',T18,'|',T20,'NO.| NO.|',T32,'ID',T37,'|',SRCT 102
     .T40,'DEVICE COST  |',T57,'EFFICIENCY  |',T73,'EFFICIENCY',T85,'|',SRCT 103
     .9('____'),'__|')                                                     SRCT 104
      WRITE (6,15)                                                          SRCT 105
   15 FORMAT(T9,'|',T18,'|',T23,'|',T28,'|',T37,'|',T53,'|',T69,'|',T85,SRCT 106
     .'|',T98,'|',T111,'|',T124,'|')                                       SRCT 107
      WRITE (6,16)                                                          SRCT 108
   16 FORMAT('+',T88,'EXISTING',T100,'ALLOWABLE',T113,'CONTROLLED')         SRCT 109
```

```
      WRITE (6,11)                                                      SRCT 110
   50     CONEM = EXEM                                                  SRCT 111
      IF(ICID .EQ. 0) GO TO 60                                          SRCT 112
      NCON(I)=NCON(I)+1                                                 SRCT 113
      LL = 1                                                            SRCT 114
      IF(AEM .GE. EXEM) GO TO 61                                        SRCT 115
          CONEM = EXEM * (1. - EFF(IPOL))                               SRCT 116
      IF(CONEM .LE. AEM) GO TO 61                                       SRCT 117
      ICASE(I) = 2                                                      SRCT 118
      LL = 2                                                            SRCT 119
      GO TO 61                                                          SRCT 120
   60 CONTINUE                                                          SRCT 121
      LL = 1                                                            SRCT 122
      IF (IREG .EQ.1) GO TO 61                                          SRCT 123
      IF(AEM .GT. EXEM) GO TO 61                                        SRCT 124
      LL = 3                                                            SRCT 125
      NCAS(I) = 1                                                       SRCT 126
   61 SCONEM(I)=SCONEM(I)+CONEM                                         SRCT 127
      SEXEM(I)=SEXEM(I)+EXEM                                            SRCT 128
      SAEM(I) = SAEM(I) + AEM                                           SRCT 129
C     WRITE OUTPUT                                                      SRCT 130
      WRITE (6,15)                                                      SRCT 131
      WRITE (6,15)                                                      SRCT 132
C                                                                       SRCT 133
C     CASE3.....NORMAL CASE                                             SRCT 134
C                                                                       SRCT 135
      IF(REFF .LT. 0.0) REFF= 0.0                                       SRCT 136
          IP = MOD(ISITE,100)                                           SRCT 137
          IS = ISITE / 100                                              SRCT 138
   52 WRITE(6,19) ISIC,IS,   IP,GCAS(IGAS+1),LCAS(LL),ICID,COSTI,       SRCT 139
     .     EFF(IPOL),REFF,EXEM,AEM,CONEM                                SRCT 140
   19 FORMAT('+',T12,I4,T19,I3,T25,I2,T29,A1,A2,I3,T39,'$',F12.2,T58,   SRCT 141
     .F7.5,T74,F7.5,T87,F9.2,T100,F9.2,T113,F9.2)                       SRCT 142
      SCOSTI(I)=SCOSTI(I)+COSTI                                         SRCT 143
  900 CONTINUE                                                          SRCT 144
      LINES=LINES+1                                                     SRCT 145
      IF(LINES .EQ. 20) GO TO 555                                       SRCT 146
      GO TO 160                                                         SRCT 147
  555 WRITE (6,11)                                                      SRCT 148
      WRITE (6,18)                                                      SRCT 149
   18 FORMAT(T31,'(*) INDICATES MOST EFFICIENT DEVICE WAS USED BUT ',   SRCT 150
     1       T80,'ALLOWABLE WAS NOT ATTAINED.'/T31,'(**) INDICATES NO DESRCT 151
     .VICE AVAILABLE TO CONTROL THE SOURCE'/T31,'(G) INDICATES GAS COOLISRCT 152
     .NG WAS REQUIRED PRIOR TO DEVICE APPLICATION.')                    SRCT 153
      LINES=0                                                           SRCT 154
      IF (NDFLG .EQ. 0 ) GO TO 160                                      SRCT 155
C                                                                       SRCT 156
C     END OF EMISSION TYPE                                              SRCT 157
C                                                                       SRCT 158
 1000 CONTINUE                                                          SRCT 159
      RETURN                                                            SRCT 160
      END                                                               SRCT 161
```

Subprogram Name

JURSUM

Purpose

To summarize source emissions per category for each jurisdiction.

Calling Sequence

CALL JURSUM

Computer Language

IBM 360 - FORTRAN IV G LEVEL 18

Input

None

Output

1. Jurisdiction Summary Report for each jurisdiction.
2. Jurisdiction Emission Report
3. Jurisdiction Control-Cost-Effectiveness Report
4. Jurisdiction Fuel Use Reports.

Subroutines

None

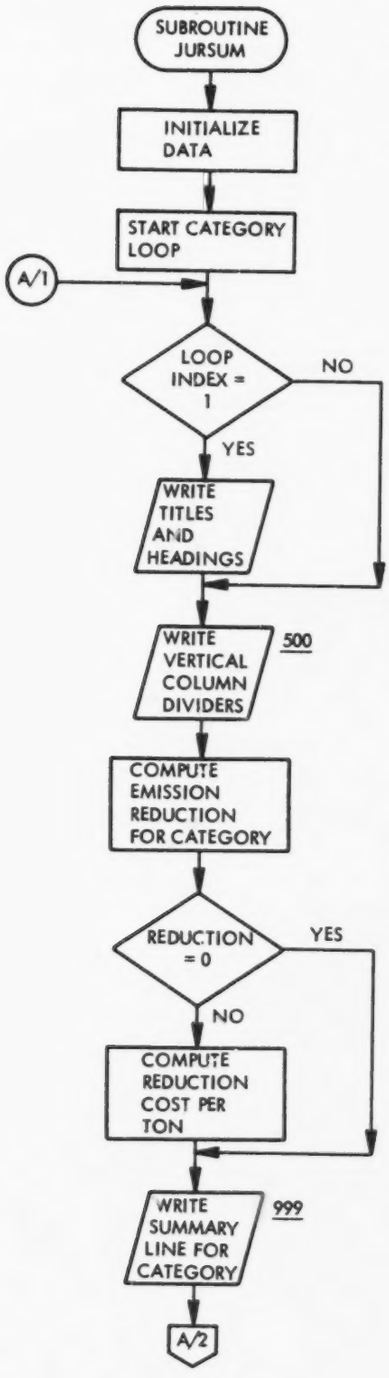
Procedure

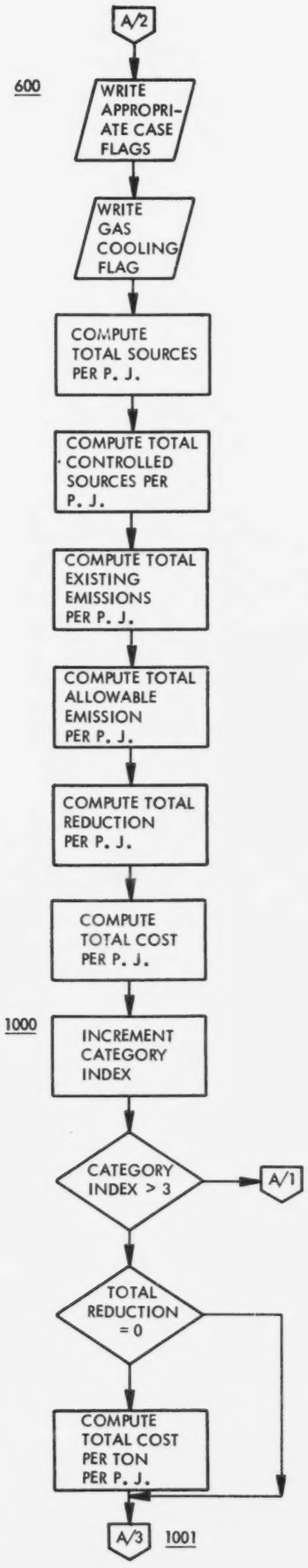
The program prints point source data subtotals for each category - standard and sums all category - standards to print total values for the jurisdiction. A jursidiction summary of fuel use and total area and point source reduction are calculated and printed.

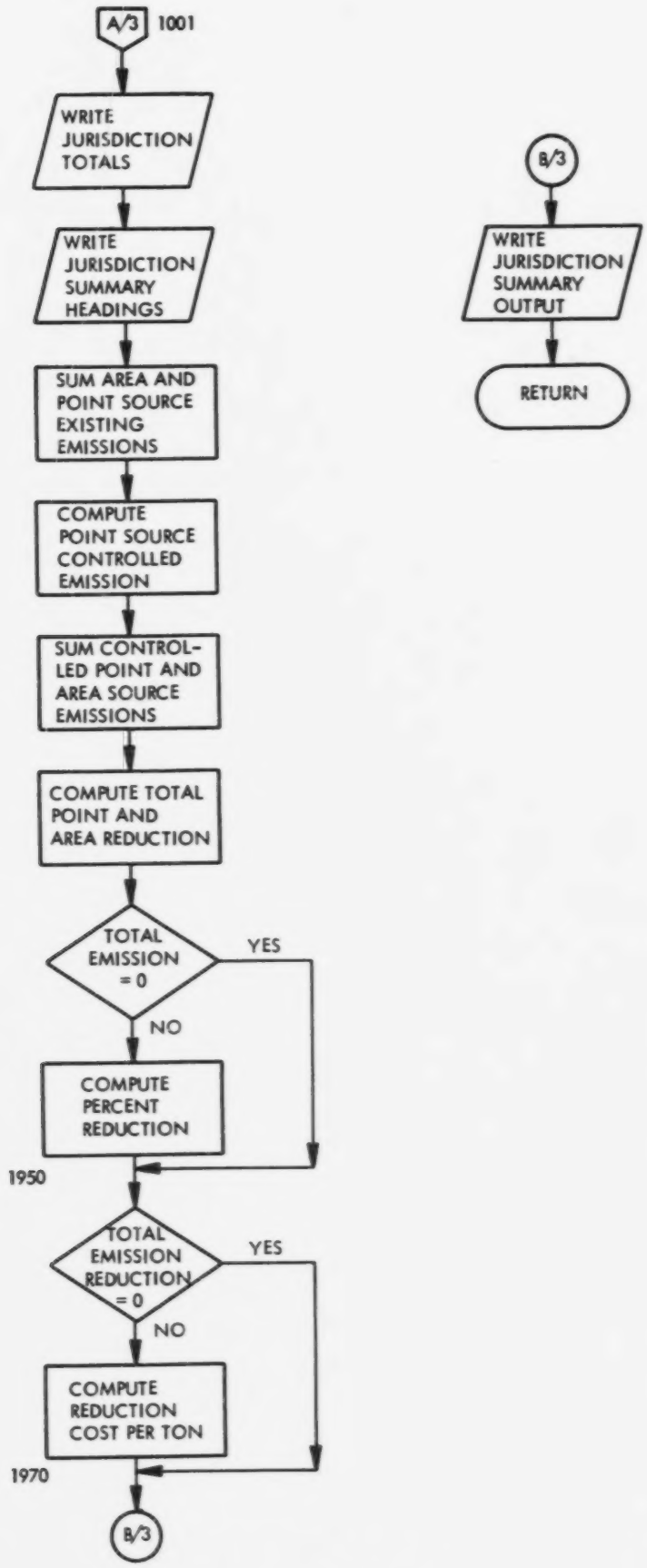
Input/Output Variables

COMMON

Variables Name	Description
NCON	Number of controlled sources per category
NSRC	Number of sources
SEXEM	Sub-total of existing emissions per category
SEMRED	Sub-total of reduced emissions per category
SCOSTI	Sub-total of device costs per category
SCPT	Sub-total of cost per ton reduced per category


SUBROUTINE JURSUM
INITIALIZE DATA
START CATEGORY LOOP
A/1
LOOP INDEX = 1
NO
YES
WRITE TITLES AND HEADINGS
WRITE VERTICAL COLUMN DIVIDERS
500
COMPUTE EMISSION REDUCTION FOR CATEGORY
REDUCTION = 0
YES
NO
COMPUTE REDUCTION COST PER TON
WRITE SUMMARY LINE FOR CATEGORY
999
A/2


A/2
600
WRITE APPROPRI-ATE CASE FLAGS
WRITE GAS COOLING FLAG
COMPUTE TOTAL SOURCES PER P. J.
COMPUTE TOTAL CONTROLLED SOURCES PER P. J.
COMPUTE TOTAL EXISTING EMISSIONS PER P. J.
COMPUTE TOTAL ALLOWABLE EMISSION PER P. J.
COMPUTE TOTAL REDUCTION PER P. J.
COMPUTE TOTAL COST PER P. J.
1000
INCREMENT CATEGORY INDEX
CATEGORY INDEX > 3
A/1
TOTAL REDUCTION = 0
COMPUTE TOTAL COST PER TON PER P. J.
A/3
1001


A/3
1001
WRITE JURISDICTION TOTALS
WRITE JURISDICTION SUMMARY HEADINGS
SUM AREA AND POINT SOURCE EXISTING EMISSIONS
COMPUTE POINT SOURCE CONTROLLED EMISSION
SUM CONTROL-LED POINT AND AREA SOURCE EMISSIONS
COMPUTE TOTAL POINT AND AREA REDUCTION
TOTAL EMISSION = 0
YES
NO
COMPUTE PERCENT REDUCTION
1950
TOTAL EMISSION REDUCTION = 0
YES
NO
COMPUTE REDUCTION COST PER TON
1970
B/3
B/3
WRITE JURISDICTION SUMMARY OUTPUT
RETURN

```
      SUBROUTINE JURSUM                                                 JURS   1
C                                                                       JURS   2
C     CONTROL JURISDICTION SUMMARY PROGRAM                              JURS   3
C                                                                       JURS   4
      DIMENSION SEMRED(3),SCPT(3),GCAS(2)                               JURS   5
      DIMENSION NAME4(5,3)                                              JURS   6
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASFAC(10,2),ASCALE(2,500),    JURS   7
     .             KSID(2,500),IFAC                                     JURS   8
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),JURS   9
     .    KREG(3,10),NREGON,NCAS(3),IPJN(10),ISCERR,NSCALE,IPRJ,NGAS(3) JURS  10
     .,IG(10),ICS(10),NCS(10)                                           JURS  11
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)     JURS  12
      COMMON /RCPT/ RECEPT(2),CPOLUT(2),AQSTAN(2),UTM(2),SOURCE(2),     JURS  13
     . SO2CAL(2),PARCAL(2)                                              JURS  14
      COMMON /SRCCON/ BKGRND(2),ASPRJ(10,2),SCCNTR(2)                   JURS  15
      COMMON /STAT/ SO2AVG(3),PARAVG(3),SGDS(12),SGDP(12),ISTATS(12),   JURS  16
     1       ISTATP(12),NSEL12,SO2PER(3),PARPER(3),XP(2,12),ICNT12      JURS  17
      COMMON /SUMS/ SCONEM(3),SEXEM(3),NCON(3),AVRGLC(2),SFQTY(4),      JURS  18
     1 ITNSRC(10),ITNCON(10),TSEXEM(10),TSCOST(10),SCOSTI(3),TEMRED(10),JURS  19
     . TFQTY(4),SAEM(3),TSAEM(10)                                       JURS  20
      DATA NAME4/'    ',' FUE','L CO','MBUS','TION',                    JURS  21
     1           '  IN','DUST','RIAL',' PRO','CESS',                    JURS  22
     2           'SOLI','D WA','STE ','DISP','OSAL'/                    JURS  23
      DATA GCAS/' ','G'/                                                JURS  24
      ITNSRC(IPJ) = 0                                                   JURS  25
      ITNCON(IPJ) = 0                                                   JURS  26
      TSEXEM(IPJ) = 0.0                                                 JURS  27
          TSAEM(IPJ) = 0.                                               JURS  28
      TSCOST(IPJ) = 0.0                                                 JURS  29
      TEMRED(IPJ) = 0.0                                                 JURS  30
      TCPT=0.                                                           JURS  31
      DO 1000 I=1,IEND                                                  JURS  32
      SCPT(I)=0.                                                        JURS  33
      IF (I.NE.1) GO TO 500                                             JURS  34
C                                                                       JURS  35
C     WRITE TITLE AND HEADINGS                                          JURS  36
C                                                                       JURS  37
    9 WRITE (6,9000) REGION, DATE                                       JURS  38
 9000 FORMAT('1',T33,18A4,T109,5A4/)                                    JURS  39
      WRITE (6,10) (PJNAME(N,IPJ),N=1,5)                                JURS  40
   10 FORMAT (    T47,' J U R I S D I C T I O N  S U M M A R Y'//T45,   JURS  41
     1 5A4,' JURISDICTION'/)                                            JURS  42
C                                                                       JURS  43
C     WRITE UNDERLINE                                                   JURS  44
C                                                                       JURS  45
      WRITE (6,1)                                                       JURS  46
    1 FORMAT (T6,31('____'))                                            JURS  47
      WRITE (6,2)                                                       JURS  48
    2 FORMAT (T5,'|',T28,'|',T42,'|',T56,'|',T75,'|',T95,'|',T112,'|',  JURS  49
     1        T130,'|')                                                 JURS  50
      WRITE (6,2)                                                       JURS  51
      WRITE (6,3)                                                       JURS  52
    3 FORMAT ('+',T8,'REGULATION TYPE',T33,'TOTAL',T47,'TOTAL',T61,'EMIS JURS  53
     1SIONS',T76,'CONTROLLED EMISSION',T100,'ANNUAL',T115,              JURS  54
```


NOT REPRODUCIBLE

```
     2'CONTROL COST')                                                    JURS  55
      WRITE (6,2)                                                        JURS  56
      WRITE (6,4)                                                        JURS  57
    4 FORMAT ('+',T30,'APPLICABLE',T44,'CONTROLLED',T64,'FOR'            JURS  58
     1,T80,'REDUCTION',T97,'CONTROL COST',T117,'PER TON')                JURS  59
      WRITE (6,2)                                                        JURS  60
      WRITE (6,5)                                                        JURS  61
    5 FORMAT ('+',T11,'AND NUMBER',T29,'POINT SOURCES',T43,'POINT SOURCEJURS  62
     1S',T59,'POINT SOURCES',T80,'(TONS/DAY)',T96,'(MILLIONS OF $)',T114JURS  63
     2,'REMOVED ($/TON)')                                                JURS  64
      WRITE (6,2)                                                        JURS  65
      WRITE (6,6)                                                        JURS  66
    6 FORMAT ('+',T61,'(TONS/DAY)')                                      JURS  67
      WRITE (6,2)                                                        JURS  68
      WRITE (6,11)                                                       JURS  69
   11 FORMAT('+',T57,'ALLOWED | EXISTING')                               JURS  70
      WRITE (6,7)                                                        JURS  71
    7 FORMAT ('+',T6,31('____'))                                         JURS  72
  500 WRITE (6,2)                                                        JURS  73
      SEMRED(I)=SEXEM(I)-SCONEM(I)                                       JURS  74
      IF (SEMRED(I).EQ.0.) GO TO 999                                     JURS  75
      SCPT(I)=SCOSTI(I)/(SEMRED(I)*365.)                                 JURS  76
C                                                                        JURS  77
C     WRITE OUTPUT                                                       JURS  78
C                                                                        JURS  79
  999 WRITE (6,2)                                                        JURS  80
      WRITE (6,8) (NAME4(J,I),J=1,5),NSRC(I),NCON(I),SAEM(I),SEXEM(I),   JURS  81
     1   SEMRED(I),SCOSTI(I),SCPT(I)                                     JURS  82
    8 FORMAT('+',T7,5A4,T33,I4,T47,I4,T57,F8.2,T67,F8.2,      T82,F7.2JURS  83
     .,T100,-6PF7.3,T116,0PF10.2)                                        JURS  84
      WRITE (6,2)                                                        JURS  85
      WRITE (6,101) KREG(I,IPJ)                                          JURS  86
  101 FORMAT ('+',T13,I3)                                                JURS  87
C                                                                        JURS  88
      IF (ICASE(I) .NE. 2) GO TO 600                                     JURS  89
      ICS(IPJ) = 2                                                       JURS  90
      WRITE (6,450)                                                      JURS  91
C                                                                        JURS  92
  600 CONTINUE                                                           JURS  93
      IF (NCAS(I) .NE. 1) GO TO 610                                      JURS  94
      WRITE (6,451)                                                      JURS  95
      NCS(IPJ) = 1                                                       JURS  96
  450 FORMAT ('+',T45, '*')                                              JURS  97
  451 FORMAT('+',T51,'**')                                               JURS  98
  452 FORMAT('+',T43,A1)                                                 JURS  99
  610 WRITE (6,452) GCAS(NGAS(I)+1)                                      JURS 100
C                                                                        JURS 101
C     COMPUTE SUMS                                                       JURS 102
C                                                                        JURS 103
      ITNSRC(IPJ) = ITNSRC(IPJ) + NSRC(I)                                JURS 104
      ITNCON(IPJ) = ITNCON(IPJ) + NCON(I)                                JURS 105
      TSEXEM(IPJ) = TSEXEM(IPJ) + SEXEM(I)                              JURS 106
      TSAEM(IPJ) = TSAEM(IPJ) + SAEM(I)                                  JURS 107
      TEMRED(IPJ) = TEMRED(IPJ) + SEMRED(I)                              JURS 108
      TSCOST(IPJ) = TSCOST(IPJ) + SCOSTI(I)                              JURS 109
```

```
 1000 CONTINUE                                                          JURS 110
      IF (TEMRED(IPJ) .EQ. 0.0) GO TO 1001                              JURS 111
      TCPT = TSCOST(IPJ) / (TEMRED(IPJ) * 365.)                         JURS 112
 1001 CONTINUE                                                          JURS 113
C                                                                       JURS 114
C     WRITE SUMS                                                        JURS 115
C                                                                       JURS 116
      WRITE (6,2)                                                       JURS 117
      WRITE (6,2)                                                       JURS 118
      WRITE (6,7)                                                       JURS 119
      WRITE (6,2)                                                       JURS 120
      WRITE (6,2)                                                       JURS 121
      WRITE(6,96)ITNSRC(IPJ),ITNCON(IPJ),TSAEM(IPJ),TSEXEM(IPJ),        JURS 122
     .TEMRED(IPJ),TSCOST(IPJ),TCPT                                      JURS 123
   96 FORMAT('+',T8,'JURISDICTION TOTAL',T33,I4,T47,I4,T57,F8.2,T67,    JURS 124
     . F8.2,        T82,F7.2,T100,-6PF7.3,T116,0PF10.2)                JURS 125
      WRITE (6,2)                                                       JURS 126
      WRITE (6,7)                                                       JURS 127
      WRITE (6,195)                                                     JURS 128
  195 FORMAT(T51,'(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSIJURS 129
     1ON'/T55,'(**) NO DEVICE AVAILABLE  TO CONTROL SOME SOURCES.'/T55, JURS 130
     .'(G) GAS COOLING APPLIED TO SOME SOURCE(S).')                     JURS 131
C                                                                       JURS 132
C   WRITE JURISDICTION EMISSIONS AND CONTROL COST-EFFECTIVENESS         JURS 133
C                                                                       JURS 134
      WRITE (6,97)                                                      JURS 135
   97 FORMAT(///T20,'J U R I S D I C T I O N  E M I S S I O N S',T84,'J JURS 136
     .U R I S D I C T I O N  F U E L  U S E'/'+',T10,65('_'),           JURS 137
     . T81,43('_'))                                                     JURS 138
C                                                                       JURS 139
C     TOTAL EXISTING EMISSION COMPUTATION                               JURS 140
C                                                                       JURS 141
      TOTALE = TSEXEM(IPJ) + TEXAR(IPOL,IPJ)                           JURS 142
C                                                                       JURS 143
C     CONTROLLED POINT AND TOTAL EMISSION COMPUTATION                   JURS 144
C                                                                       JURS 145
      TPOINT = TSEXEM(IPJ) - TEMRED(IPJ)                               JURS 146
      TOTALC=TPOINT+TCAR(IPOL,IPJ)                                      JURS 147
C                                                                       JURS 148
C     TONS/DAY REMOVED COMPUTATION AND PERCENTAGE                       JURS 149
C                                                                       JURS 150
      TONSR=TOTALE-TOTALC                                               JURS 151
      PERCNT = 0.0                                                      JURS 152
      IF (TOTALE .EQ. 0.0) GO TO 1950                                   JURS 153
      PERCNT=TONSR/TOTALE*100.                                          JURS 154
 1950 CONTINUE                                                          JURS 155
C                                                                       JURS 156
C     REDUCTION COMPUTATION                                             JURS 157
C                                                                       JURS 158
      REDUCE=0.                                                         JURS 159
      IF (TEMRED(IPJ) .EQ. 0.0) GO TO 1970                              JURS 160
      REDUCE = TSCOST(IPJ) / (TEMRED(IPJ) * 365.)                       JURS 161
 1970 CONTINUE                                                          JURS 162
      WRITE(6,105)SFQTY(1),TSEXEM(IPJ),TPOINT,SFQTY(2),TEXAR(IPOL,IPJ), JURS 163
     .TCAR(IPOL,IPJ),SFQTY(3),SFQTY(4),TOTALE,TOTALC,TONSR,PERCNT       JURS 164
  105 FORMAT(///T10,'EXISTING EMISSIONS (TONS/DAY)',T44,'CONTROLLED EMISSJURS 165
     .IONS (TONS/DAY)',T86,'COAL (TONS/DAY)',T101,10('.'),F13.3//T12,'POJURS 166
     .INT SOURCES....',F6.1,T47,'POINT SOURCES.... ',F6.1,T86,'RESID. OIJURS 167
     .L (GAL/DAY).....',F13.3//T12,'AREA SOURCES.....', F6.1,T47,'AREA SJURS 168
     .OURCES..... ',F6.1,T86,'DIST. OIL (GAL/DAY).....',F13.3/T29,81'_'JURS 169
     .),T64,8('_')/T86,'GAS (1000 CU. FT./DAY)...',F13.3/T12,'TOTAL EMISJURS 170
     .SIONS..',F7.1,T47,'TOTAL EMISSIONS..',F7.1//T10,'CONTROLLED REDUCTJURS 171
     .ION..',F6.1,T45,'PERCENTAGE REDUCTION... ',F4.1,' %')             JURS 172
      WRITE (6,106) REDUCE                                              JURS 173
  106 FORMAT(////T29,'J U R I S D I C T I O N  C O N T R O L  C O S T - JURS 174
     1E F F E C T I V E N E S S'/T30,17('____'),'_'///T15,'REDUCTION IN JURS 175
     .TOTAL POINT SOURCE EMISSION RATE . . . . . .JURS 176
     .  ',F7.2,' DOLLARS/TON')                                          JURS 177
      RETURN                                                            JURS 178
      END                                                               JURS 179
```


NOT REPRODUCIBLE

Subprogram Name

RECOUT

Purpose

To calculate new ground level concentration and punch a plot deck. Outputs projected G.L.C.'s if reentered for projection.

Calling Sequence

CALL RECOUT

Computer Language

IBM 360 - FORTRAN IV G LEVEL 18

Input

1. Intermediate File generated by SRCTAB

Output

1. Control Strategy Effects on Ground Level Concentrations Report

Subroutines

None

Procedure

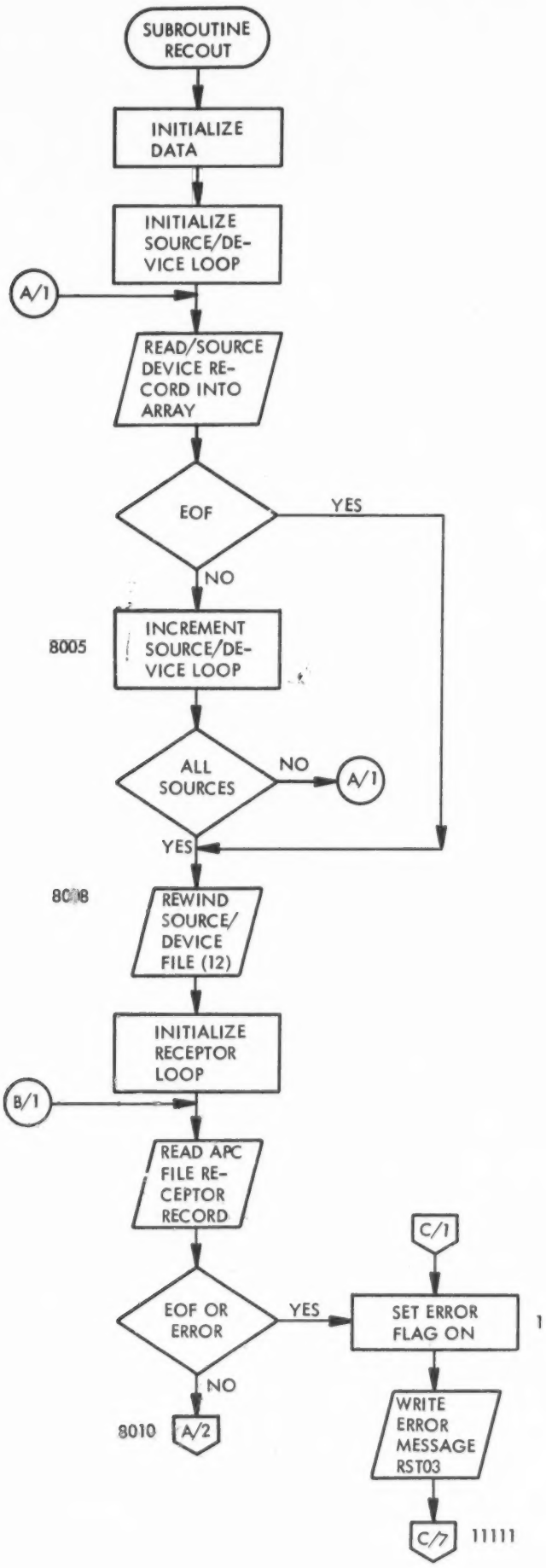
For each receptor input from the source contribution file the sources are reduced by the amount specified from the strategy used and summed to produce an uncalibrated ground level contribution. The G.L.C.'s are then calibrated and printed and punched for plotting if the plot flag is on.

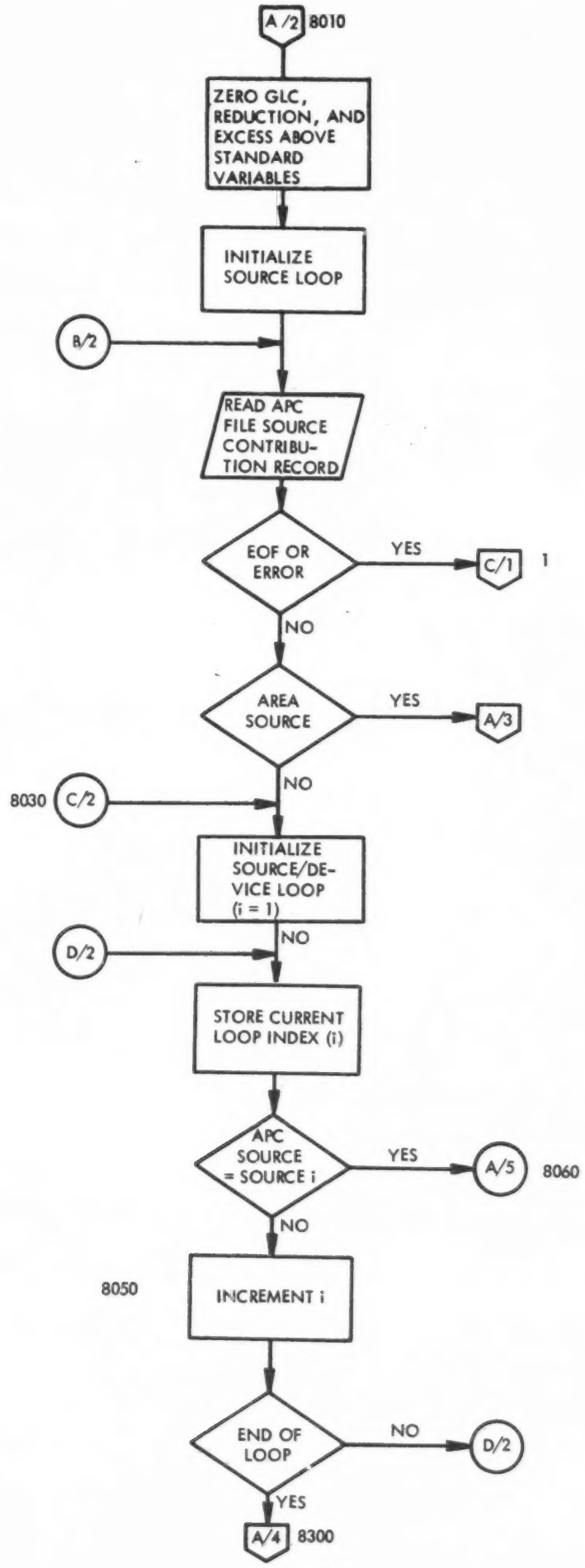
For projections the same procedure is followed as above except that a projected value for each source is calculated before calibration.

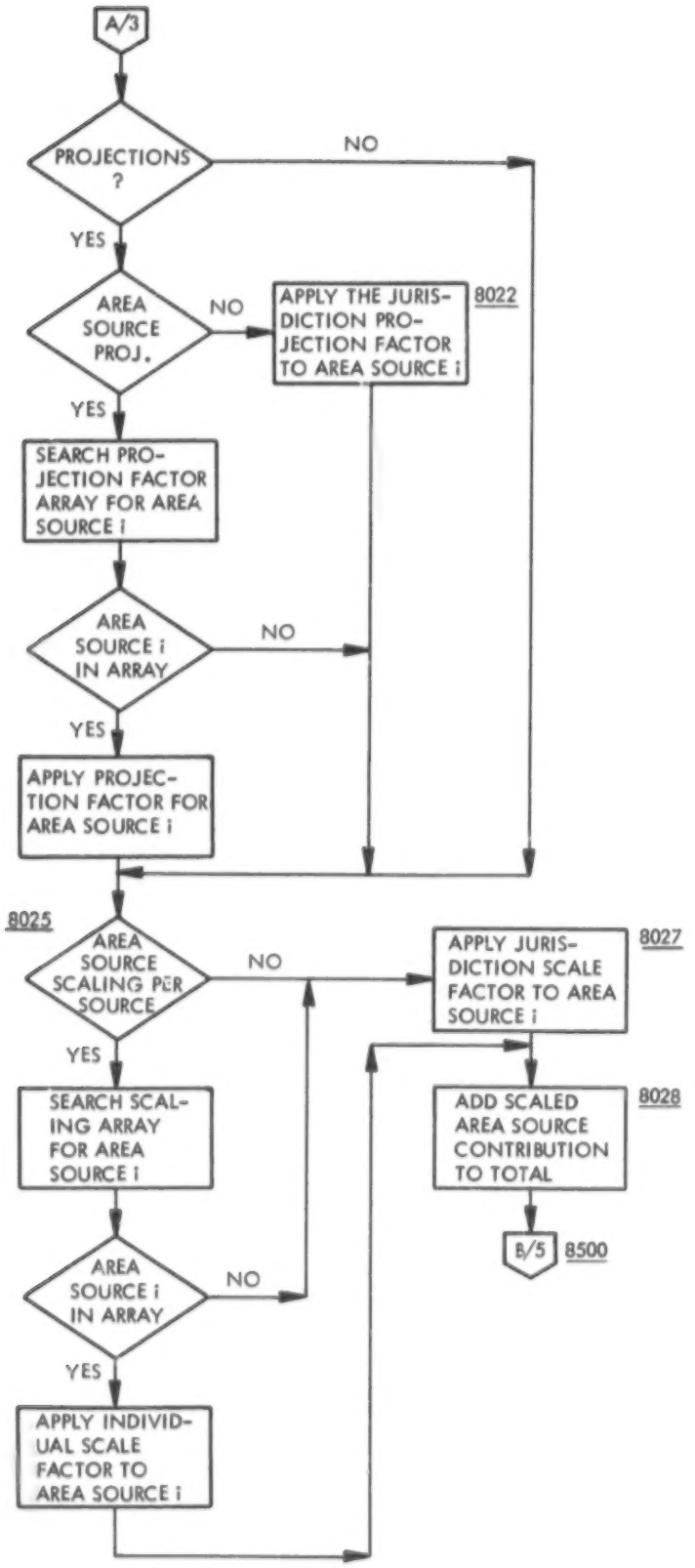
Input/Output

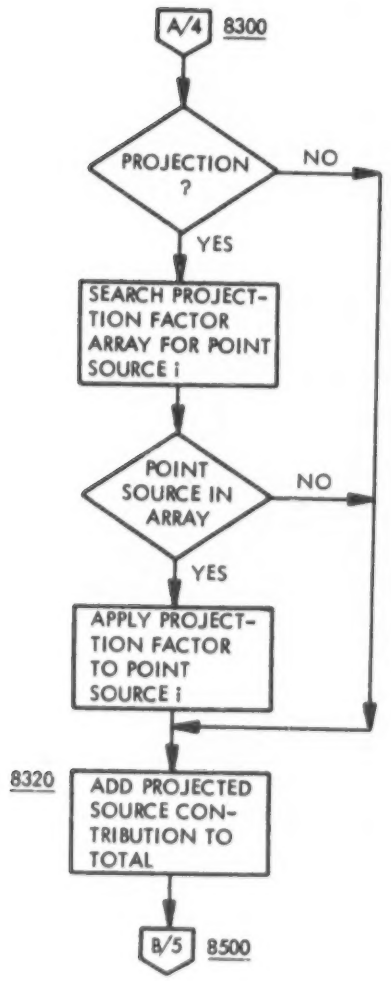
Input

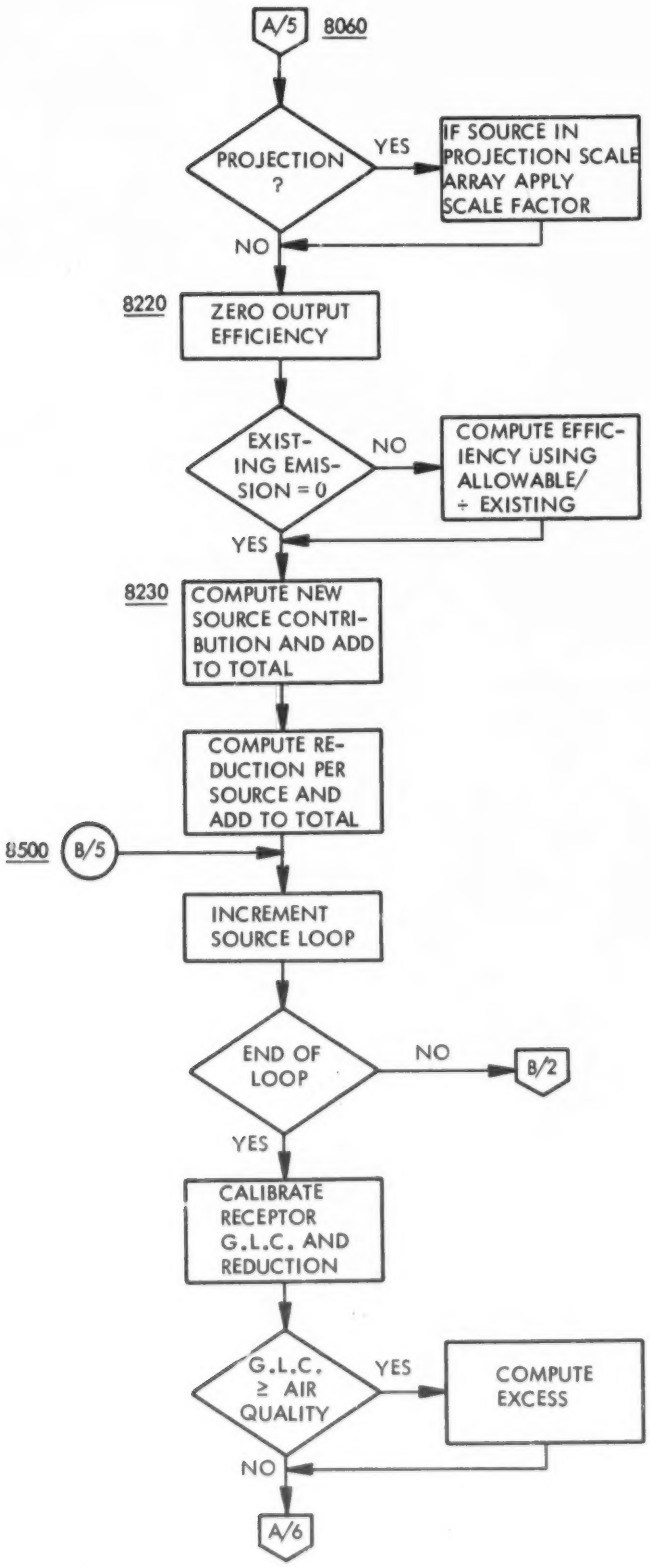
1. Intermediate File from SRCTAB
   See SRCTAB Input/Output Variables Section.

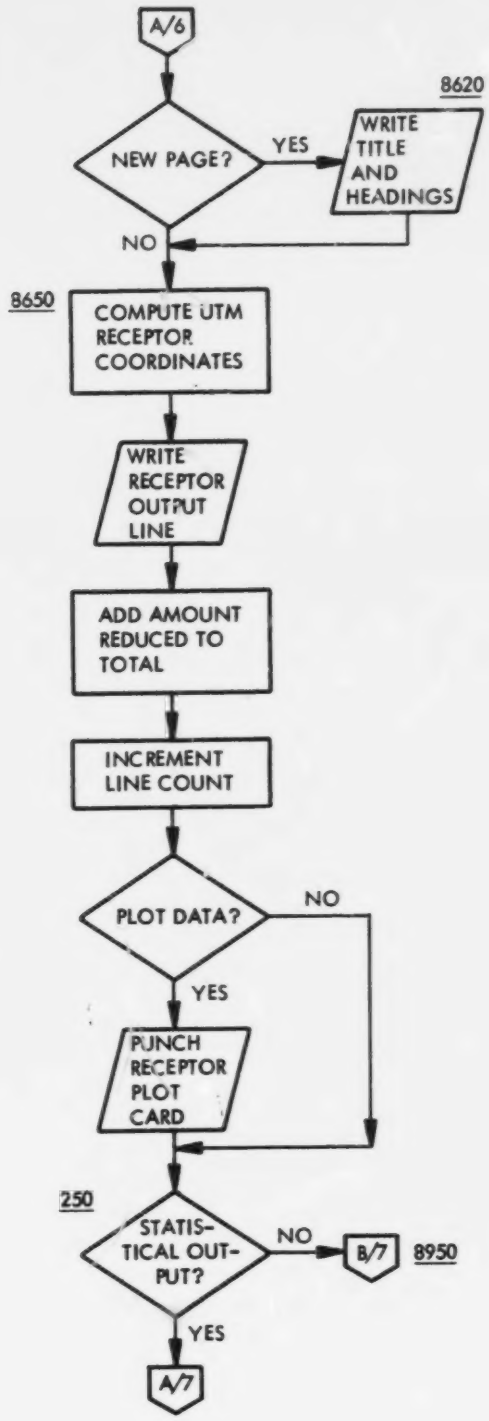

SUBROUTINE RECOUT
INITIALIZE DATA
INITIALIZE SOURCE/DE-VICE LOOP
A/1
READ/SOURCE DEVICE RE-CORD INTO ARRAY
EOF
YES
NO
8005
INCREMENT SOURCE/DE-VICE LOOP
ALL SOURCES
NO
A/1
YES
8008
REWIND SOURCE/ DEVICE FILE (12)
INITIALIZE RECEPTOR LOOP
B/1
READ APC FILE RE-CEPTOR RECORD
C/1
EOF OR ERROR
YES
SET ERROR FLAG ON
1
NO
8010
A/2
WRITE ERROR MESSAGE RST03
C/7
11111

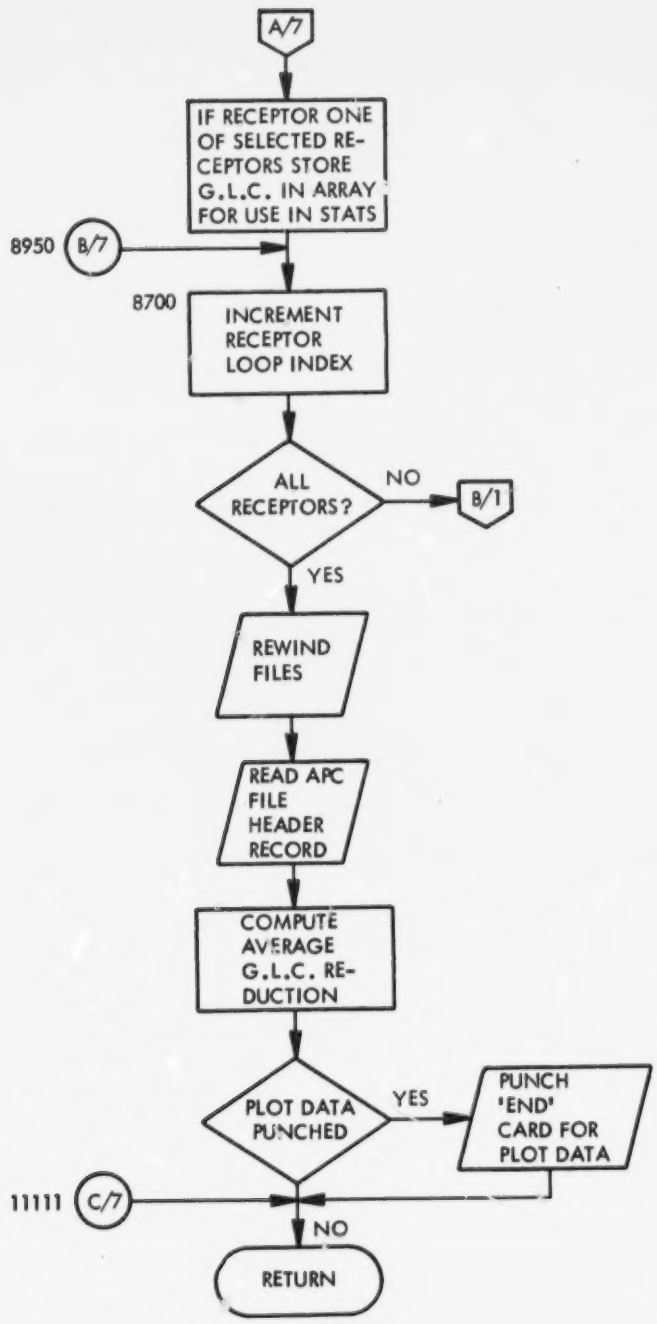

A/2
8010
ZERO GLC, REDUCTION, AND EXCESS ABOVE STANDARD VARIABLES
INITIALIZE SOURCE LOOP
B/2
READ APC FILE SOURCE CONTRIBU-TION RECORD
EOF OR ERROR
YES
C/1
1
NO
AREA SOURCE
YES
A/3
NO
8030
C/2
INITIALIZE SOURCE/DE-VICE LOOP (i = 1)
NO
D/2
STORE CURRENT LOOP INDEX (i)
APC SOURCE = SOURCE i
YES
A/5
8060
NO
8050
INCREMENT i
END OF LOOP
NO
D/2
YES
A/4
8300


A/3
PROJECTIONS ?
NO
YES
AREA SOURCE PROJ.
NO
APPLY THE JURISDICTION PROJECTION FACTOR TO AREA SOURCE i
8022
YES
SEARCH PROJECTION FACTOR ARRAY FOR AREA SOURCE i
AREA SOURCE i IN ARRAY
NO
YES
APPLY PROJECTION FACTOR FOR AREA SOURCE i
8025
AREA SOURCE SCALING PER SOURCE
NO
APPLY JURISDICTION SCALE FACTOR TO AREA SOURCE i
8027
YES
SEARCH SCALING ARRAY FOR AREA SOURCE i
ADD SCALED AREA SOURCE CONTRIBUTION TO TOTAL
8028
AREA SOURCE i IN ARRAY
NO
B/5 8500
YES
APPLY INDIVIDUAL SCALE FACTOR TO AREA SOURCE i


A/4
8300
PROJECTION ?
NO
YES
SEARCH PROJECT-TION FACTOR ARRAY FOR POINT SOURCE i
POINT SOURCE IN ARRAY
NO
YES
APPLY PROJECT-TION FACTOR TO POINT SOURCE i
8320
ADD PROJECTED SOURCE CON-TRIBUTION TO TOTAL
B/5
8500


A/5
8060
PROJECTION ?
YES
IF SOURCE IN PROJECTION SCALE ARRAY APPLY SCALE FACTOR
NO
8220
ZERO OUTPUT EFFICIENCY
EXIST-ING EMIS-SION = 0
NO
COMPUTE EFFIC-IENCY USING ALLOWABLE/ ÷ EXISTING
YES
8230
COMPUTE NEW SOURCE CONTRI-BUTION AND ADD TO TOTAL
COMPUTE RE-DUCTION PER SOURCE AND ADD TO TOTAL
8500
B/5
INCREMENT SOURCE LOOP
END OF LOOP
NO
B/2
YES
CALIBRATE RECEPTOR G.L.C. AND REDUCTION
G.L.C. ≥ AIR QUALITY
YES
COMPUTE EXCESS
NO
A/6


A/6
8620
NEW PAGE?
YES
WRITE TITLE AND HEADINGS
NO
8650
COMPUTE UTM RECEPTOR COORDINATES
WRITE RECEPTOR OUTPUT LINE
ADD AMOUNT REDUCED TO TOTAL
INCREMENT LINE COUNT
PLOT DATA?
NO
YES
PUNCH RECEPTOR PLOT CARD
250
STATIS-TICAL OUT-PUT?
NO
B/7
8950
YES
A/7


A/7
IF RECEPTOR ONE OF SELECTED RECEPTORS STORE G.L.C. IN ARRAY FOR USE IN STATS
8950
B/7
8700
INCREMENT RECEPTOR LOOP INDEX
ALL RECEPTORS?
NO
B/1
YES
REWIND FILES
READ APC FILE HEADER RECORD
COMPUTE AVERAGE G.L.C. REDUCTION
PLOT DATA PUNCHED
YES
PUNCH 'END' CARD FOR PLOT DATA
11111
C/7
NO
RETURN

```
      SUBROUTINE RECOUT                                                 RECO   1
C                                                                       RECO   2
C  RECEPTOR GROUND LEVEL CONCENTRATION CALCULATION PROGRAM              RECO   3
C                                                                       RECO   4
      DIMENSION PNAME(4,2),PUNIT(6),TGLCR(2),AC(2),BC(2)                RECO   5
      COMMON /PROJ/ JSID(2,2000),SCALE(2,2000)                          RECO   6
      COMMON /SRCE/ ISC(2000),ISIT(2000),AEMI(2000),ICD(2000),HS(2000), RECO   7
     +   TEMP(2000),DIA(2000),VEL(2000),EXEMI(2000),KSRC,NS             RECO   8
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASFAC(10,2),ASCALE(2,500),    RECO   9
     .             KSID(2,500),IFAC                                     RECO  10
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),RECO  11
     .   KREG(3,10),NREGON,NGAS(3),IPJN(10),ISCERR,NSCALE,IPRJ,NGAS(3) RECO  12
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)     RECO  13
      COMMON /RCPT/ RECEPT(2),CPOLUT(2),AQSTAN(2),UTM(2),SOURCE(2),     RECO  14
     . SO2CAL(2),PARCAL(2)                                              RECO  15
      COMMON /SRCCON/ BKGRND(2),ASPRJ(10,2),SCONTR(2)                   RECO  16
      COMMON /STAT/ AVRGTM(3,2),STANDV(12,2),ISEL12(12,2),NSEL12,       RECO  17
     1              PERCNT(3,2),XP(2,12),ICNT12                         RECO  18
      COMMON /SUMS/ SCONEM(3),SEXEM(3),NCON(3),AVRGLC(2),SFQTY(4),      RECO  19
     1 ITNSRC(10),ITNCON(10),TSEXEM(10),TSCOST(10),SCOSTI(3),TEMRED(10),RECO  20
     . TFQTY(4)                                                         RECO  21
      DATA PNAME/' SUL','FUR ','DIOX','IDE ',' PAR','TICU','LATE',     RECO  22
     1  'S   '/                                                         RECO  23
      DATA PUNIT/' MIC','ROGR','AMS/','CUBI','C ME','TER '/             RECO  24
C                                                                       RECO  25
          AC(1) = SO2CAL(1)                                             RECO  26
          AC(2) = PARCAL(1)                                             RECO  27
          BC(1) = SO2CAL(2)                                             RECO  28
          BC(2) = PARCAL(2)                                             RECO  29
 8000 LINE = 41                                                         RECO  30
      ICNT12 = 0                                                        RECO  31
      TGLCR(1) = 0.0                                                    RECO  32
      TGLCR(2) = 0.0                                                    RECO  33
      REWIND 12                                                         RECO  34
C                                                                       RECO  35
C    READ  SOURCE/DEVICE DATA FOR NEW GLC CALCULATION                   RECO  36
C                                                                       RECO  37
      DO 8005  IS=1,KSRC                                                RECO  38
      READ(12,END=8008) IREGON,ISC(IS),ISIT(IS),ICD(IS),KPJ,AEMI(IS),   RECO  39
     .  EXEMI(IS)                                                       RECO  40
 8005 CONTINUE                                                          RECO  41
 8008 CONTINUE                                                          RECO  42
      REWIND 12                                                         RECO  43
      DO 8700 IRECEP= 1,NRECEP                                          RECO  44
      READ(10,END=1,ERR=1) (RECEPT(L),L=1,2),IRP                        RECO  45
 8010 CRED = 0.0                                                        RECO  46
      EXCESS = 0.0                                                      RECO  47
          CPOLUT(IPOL) = 0.0                                            RECO  48
      DO 8500 ISRCE= 1,NSORCE                                           RECO  49
C                                                                       RECO  50
C  READ A SOURCE GLC RECORD FOR RECEPTOR(IRECEP)                        RECO  51
C                                                                       RECO  52
      READ(10,END=1,ERR=1) ISICT,ISITET,JPJ,(SCONTR(N),N=1,2)           RECO  53
      IF(ISICT .NE. 9999) GO TO 8030                                    RECO  54
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NOT REPRODUCIBLE

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      IF(IPRJ .EQ. 0) GO TO 8025                                          RECO  55
      IF(IPRJ .EQ. 2) GO TO 8022                                          RECO  56
      DO 8020 ISCALE=1,NS                                                 RECO  57
      IF(ISICT .NE. JSID(1,ISCALE) .OR. ISITET .NE. JSID(2,ISCALE))       RECO  58
     . GO TO 8020                                                         RECO  59
          SCONTR(IPOL)  =     SCONTR(IPOL)  *   SCALE(IPOL,ISCALE)       RECO  60
      GO TO 8025                                                          RECO  61
 8020 CONTINUE                                                            RECO  62
 8022     SCONTR(IPOL)  =     SCONTR(IPOL)   *   ASPRJ(JPJ,IPOL)         RECO  63
 8025 CONTINUE                                                            RECO  64
      IF(IFAC .EQ. 0) GO TO 8027                                          RECO  65
      DO 8026 N=1,NSCALE                                                  RECO  66
      IF(ISITET.NE. KSID(2,N)) GO TO 8026                                 RECO  67
          SCNEW = SCONTR(IPOL)    *   ASCALE(IPOL,N)                      RECO  68
      GO TO 8028                                                          RECO  69
 8026 CONTINUE                                                            RECO  70
 8027     SCNEW = SCONTR(IPOL)   *   ASFAC(JPJ,IPOL)                      RECO  71
 8028     CPOLUT(IPOL)   =    CPOLUT(IPOL)   +    SCNEW                   RECO  72
          CRED = CRED + (SCONTR(IPOL)   -  SCNEW)                         RECO  73
      GO TO 8500                                                          RECO  74
 8030 CONTINUE                                                            RECO  75
      DO 8050 IS=1,KSRC                                                   RECO  76
          NSC = IS                                                        RECO  77
      IF (ISICT .EQ. ISC(IS) .AND. ISITET .EQ. ISIT(IS)) GO TO 8060       RECO  78
 8050 CONTINUE                                                            RECO  79
      GO TO 8300                                                          RECO  80
 8060 CONTINUE                                                            RECO  81
      IF (IPRJ .EQ. 0) GO TO 8220                                         RECO  82
      DO 8210 ISCALE=1,NS                                                 RECO  83
      IF(ISICT .NE. JSID(1,ISCALE) .OR.  ISITET .NE. JSID(2,ISCALE))      RECO  84
     +GO TO 8210                                                          RECO  85
          SCONTR(IPOL)  =    SCONTR(IPOL)   *    SCALE(IPOL,ISCALE)      RECO  86
      GO TO 8220                                                          RECO  87
 8210 CONTINUE                                                            RECO  88
 8220 CONTINUE                                                            RECO  89
          EFFI = 0.0                                                      RECO  90
      IF (EXEMI(NSC) .EQ. 0.0) GO TO 8230                                 RECO  91
          EFFI = AEMI(NSC)    / EXEMI(NSC)                                RECO  92
 8230     CPOLUT(IPOL)  =   CPOLUT(IPOL)  +   SCONTR(IPOL)  * EFFI       RECO  93
          CRED = CRED + SCONTR(IPOL)  * (1. - EFFI)                       RECO  94
      GO TO 8500                                                          RECO  95
 8300 CONTINUE                                                            RECO  96
      IF (IPRJ .EQ. 0) GO TO 8320                                         RECO  97
      DO 8310 ISCALE=1,NSCALE                                             RECO  98
      IF(ISICT .NE. JSID(1,ISCALE) .OR.  ISITET .NE. JSID(2,ISCALE))      RECO  99
     +GO TO 8310                                                          RECO 100
          SCONTR(IPOL)  =   SCONTR(IPOL)  *   SCALE(IPOL,ISCALE)         RECO 101
      GO TO 8320                                                          RECO 102
 8310 CONTINUE                                                            RECO 103
 8320 CONTINUE                                                            RECO 104
          CPOLUT(IPOL)  =   CPOLUT(IPOL)  +   SCONTR(IPOL)                RECO 105
 8500 CONTINUE                                                            RECO 106
C                                                                         RECO 107
C  CALIBRATE THE RECEPTOR G.L.C.                                          RECO 108
C                                                                         RECO 109
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NOT REPRODUCIBLE

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          CPOLUT(IPOL)  =   AC(IPOL)   +  (CPOLUT(IPOL) *                RECO 110
     .                     BC(IPOL))  +   BKGRND(IPOL)                  RECO 111
          CRED= CRED + BC(IPOL)                                          RECO 112
C                                                                        RECO 113
C  TEST RECEPTOR G.L.C. TO SEE IF IT MEETS THE AIR QUALITY STANDARD      RECO 114
C                                                                        RECO 115
       IF(CPOLUT(IPOL)   .GT.  AQSTAN(IPOL))                             RECO 116
     .    EXCESS= CPOLUT(IPOL)    -   AQSTAN(IPOL)                       RECO 117
       IF (LINE .LE. 40) GO TO 8650                                      RECO 118
 8620 LINE = 0                                                           RECO 119
    9 WRITE (6,991)  REGION, DATE                                        RECO 120
  991 FORMAT('1',T33,18A4,T109,5A4/)                                     RECO 121
       IF (IPRJ .EQ.0) GO TO 8630                                        RECO 122
       WRITE (6,992)                                                     RECO 123
  992 FORMAT('0',T59,'PROJECTION FOR'/)                                  RECO 124
 8630 CONTINUE                                                           RECO 125
       WRITE (6,990)                                                     RECO 126
  990 FORMAT(/T39,'CONTROL STRATEGY EFFECTS ON GROUND LEVEL CONCENTRATIO RECO 127
     .NS'/)                                                              RECO 128
       WRITE(6,993) AQSTAN(IPOL),PUNIT,(PNAME(III,IPOL),III=1,4),UTM(1), RECO 129
     . UTM(2)                                                            RECO 130
  993 FORMAT(T10,'AIR QUALITY STANDARD ',F6.1,T40,6A4,5X,4A4/T10,'UTM OR RECO 131
     .IGIN(KILOMETERS):  X= ',F6.1,' Y= ',F6.1/)                         RECO 132
       WRITE (6,994)                                                     RECO 133
  994 FORMAT('+',T10,28('____'),'___')                                   RECO 134
       WRITE (6,995)                                                     RECO 135
  995 FORMAT(T10,'|',T12,'RECEPTOR',T21,'|',T32,'LOCATIONS',T49,'|',     RECO 136
     1    T51,'NEW CONCENTRATION VALUE|',T81,'AMOUNT REDUCED',T99,'|',   RECO 137
     2    T104,'AMOUNT IN EXCESS',T124,'|'/T10,'|',T21,'|',              RECO 138
     3    T29,'UTM,KILOMETERS',T49,'|',T74,'|',T99,'|',T124,'|')         RECO 139
       WRITE (6,996) PUNIT,PUNIT,PUNIT                                   RECO 140
  996 FORMAT(T12,'NUMBER',T28,'X',T43,'Y',T51,6A4,T76,6A4,T101,6A4)      RECO 141
       WRITE (6,997)                                                     RECO 142
  997 FORMAT('+',T10,'|',T21,'|',T35,'|',T49,'|',T74,'|',T99,'|',        RECO 143
     1       T124,'|')                                                   RECO 144
       WRITE (6,994)                                                     RECO 145
 8650 XUTM = RECEPT(1)          + UTM(1)                                 RECO 146
       YUTM = RECEPT(2)          + UTM(2)                                RECO 147
       WRITE (6,999) IRECEP,XUTM,YUTM,CPCLUT(IPOL),       CRED,EXCESS   RECO 148
  999 FORMAT(T14,I3,T24,F9.2,T38,F9.2,T55,E13.6,T80,E13.6,T105,E13.6)    RECO 149
       WRITE (6,997)                                                     RECO 150
           TGLCR(IPOL)    =    TGLCR(IPOL)       + CRED                  RECO 151
       LINE = LINE + 1                                                   RECO 152
C  IF ISOPLETHS WANTED PUNCH PLOT DATA                                   RECO 153
       IF (IPUNCH .EQ. 0) GO TO 250                                      RECO 154
C      PUNCH A RECEPTOR DATA CARD                                        RECO 155
       WRITE (7,72052) (RECEPT(L),L=1,2),CPCLUT(IPOL)                    RECO 156
72052 FORMAT(2P2F8.0,1X,2PF9.0)                                          RECO 157
  250 CONTINUE                                                           RECO 158
       IF (NSEL12 .NE. 1) GO TO 8950                                     RECO 159
       DO 8800 L = 1,12                                                  RECO 160
       IRCP = ISEL12(L,IPOL)                                             RECO 161
       IF (IRCP .GT. 0) GO TO 8750                                       RECO 162
       ICNT12 = L - 1                                                    RECO 163
       GO TO 8950                                                        RECO 164
```


NOT REPRODUCIBLE

```
8750 IF (IRECP .NE. IRECEP) GO TO 8800                                  RECO 165
     XP(IPOL,L) = CPOLUT(IPOL)                                          RECO 166
     IF (ICNT12 .GT. L) GO TO 8950                                      RECO 167
     ICNT12 = L                                                         RECO 168
     GO TO 8950                                                         RECO 169
8800 CONTINUE                                                           RECO 170
8950 CONTINUE                                                           RECO 171
8700 CONTINUE                                                           RECO 172
     REWIND 10                                                          RECO 173
     REWIND 12                                                          RECO 174
     READ (10,ERR=1) NRECEP,NSORCE                                      RECO 175
     AVRGLC(IPOL)= TGLCR(IPOL) / NRECEP                                 RECO 176
C                                                                       RECO 177
     IF(IPUNCH .EQ. 0) GO TO 11111                                      RECO 178
C                                                                       RECO 179
C  PUNCH 'END' CARD FOR PLOT DATA                                       RECO 180
C                                                                       RECO 181
     WRITE (7,72055)                                                    RECO 182
72055 FORMAT ('¬¬')                                                     RECO 183
11111 CONTINUE                                                          RECO 184
     RETURN                                                             RECO 185
   1     ISCERR = 1                                                     RECO 186
         AVRGLC(IPOL) = 0.0                                             RECO 187
     WRITE (6,912)                                                      RECO 188
 912 FORMAT('0**RST03- ERROR READING APC SOURCE CONTRIBUTION DATA- AIR   RECO 189
    .QUALITY OUTPUT TERMINATED.',56X)                                   RECO 190
     GO TO 11111                                                        RECO 191
     END                                                                RECO 192
```


NOT REPRODUCIBLE

Subprogram Name

STATS

Purpose

To calculate statistical and projected statistical output.

Calling Sequence

CALL STATS; Arguments: None

Computer Language

IBM 360 - FORTRAN IV G LEVEL 18

Input

None

Output

1. Statistical Data for Selected Receptors Report

Subroutines

ZVALU2 (FREQ, ZFREQ)

Procedure

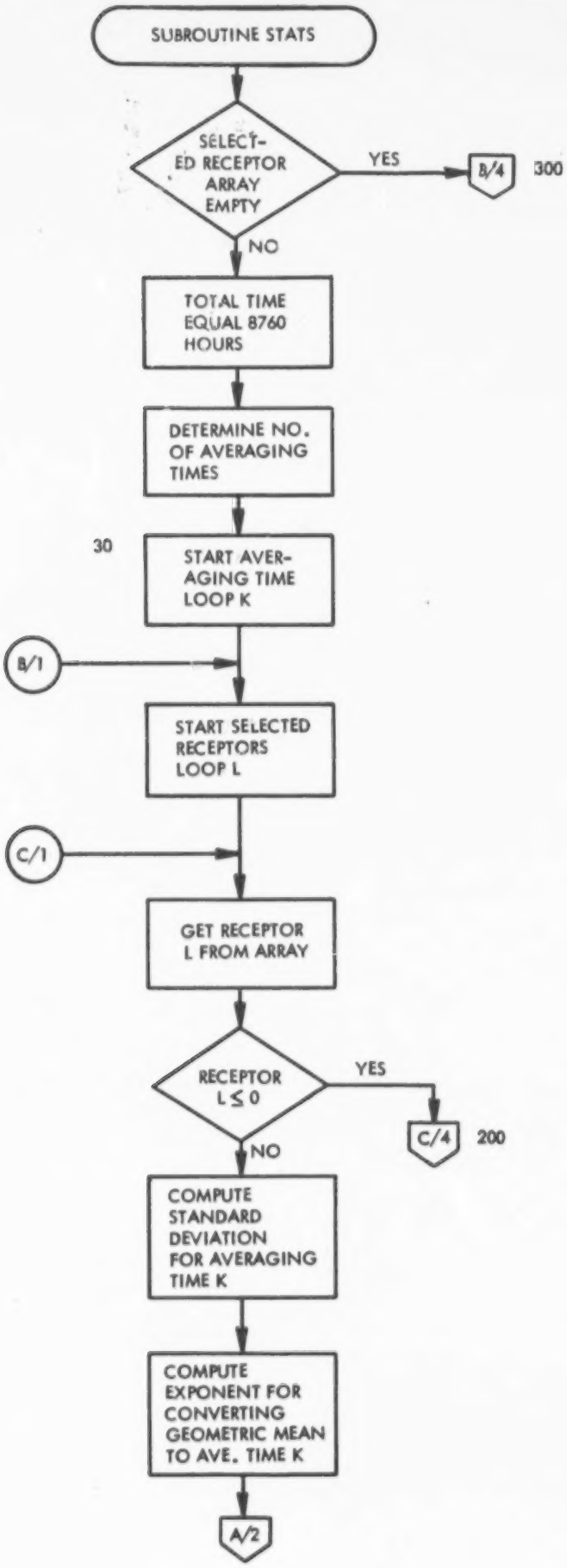
A. For each receptor specified on input:
   1. A standard deviation for an averaging time is computed.
   2. A geometric mean is computed.
   3. A maximum concentration is computed.
   4. Up to 3 percentile concentrations are computed.
   5. A receptor line is printed.
B. (A) is repeated for all receptors input up to 12.
C. A and B are repeated for each averaging time up to 3.

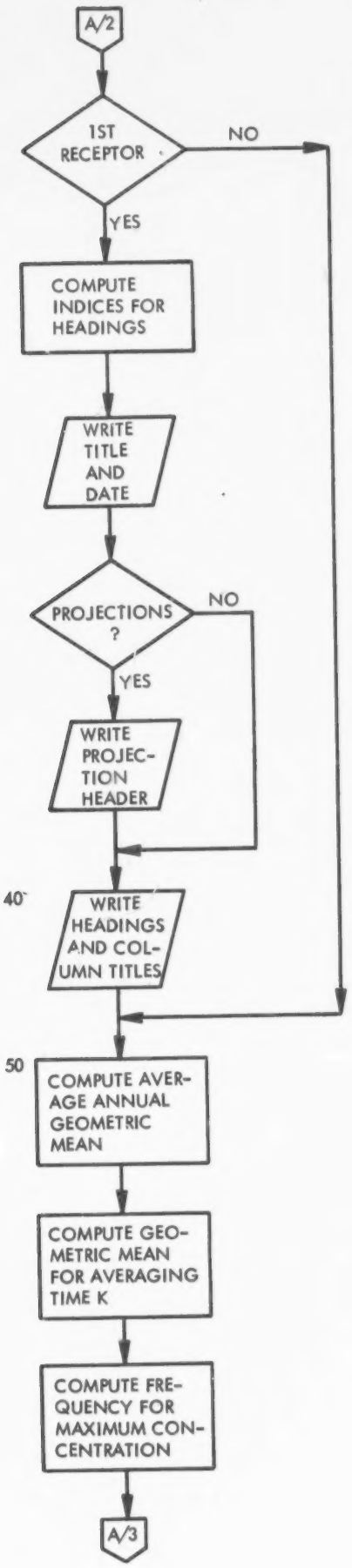
Input/Output Variables

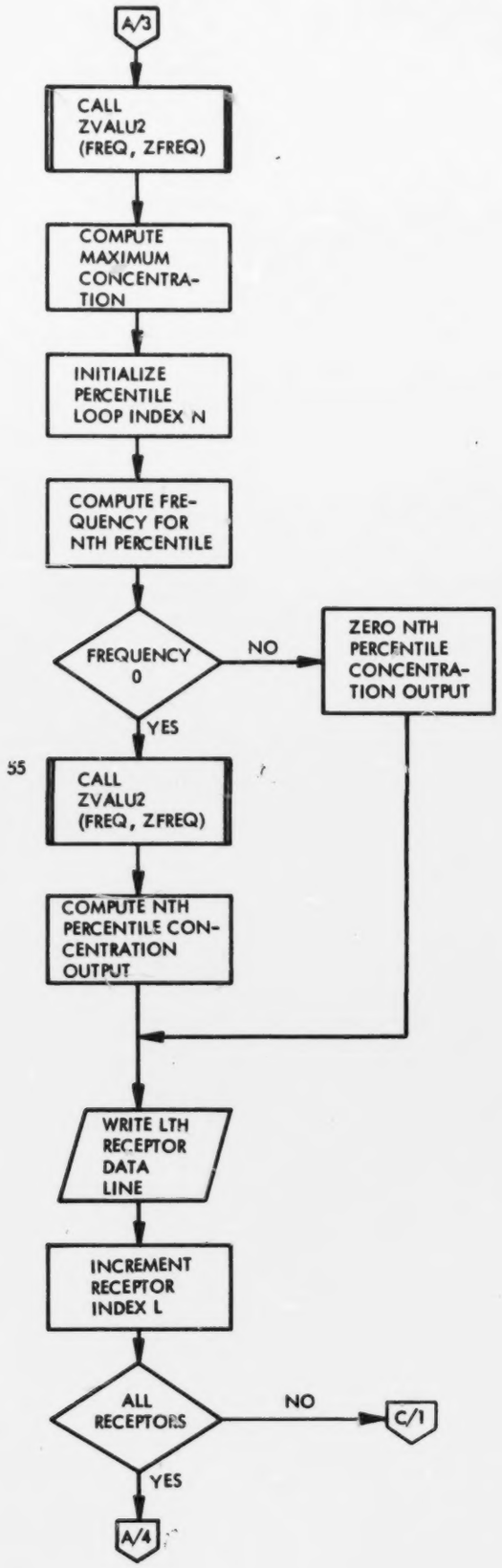
1. Input

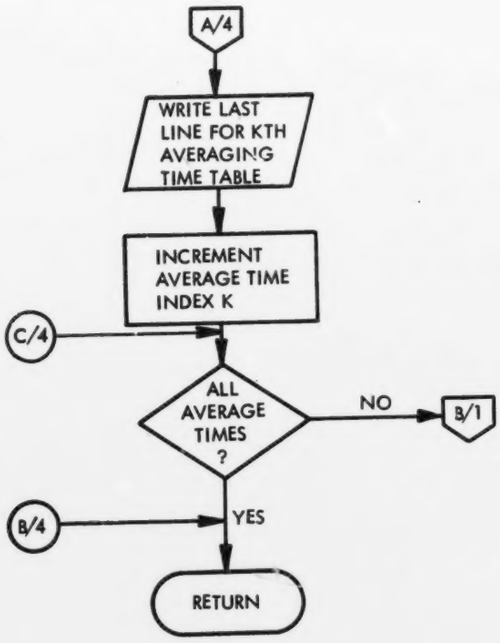
   COMMON

Variable Name	Description
ISEL12	Up to 12 receptor numbers
AVRGTM	3 averaging times per pollutant
STANDV	Up to 12 Standard geometric diviations one for each receptor


SUBROUTINE STATS
SELECTED RECEPTOR ARRAY EMPTY
YES
B/4
300
NO
TOTAL TIME EQUAL 8760 HOURS
DETERMINE NO. OF AVERAGING TIMES
30
START AVERAGING TIME LOOP K
B/1
START SELECTED RECEPTORS LOOP L
C/1
GET RECEPTOR L FROM ARRAY
RECEPTOR L ≤ 0
YES
C/4
200
NO
COMPUTE STANDARD DEVIATION FOR AVERAGING TIME K
COMPUTE EXPONENT FOR CONVERTING GEOMETRIC MEAN TO AVE. TIME K
A/2


A/2
1ST RECEPTOR
NO
YES
COMPUTE INDICES FOR HEADINGS
WRITE TITLE AND DATE
PROJECTIONS ?
NO
YES
WRITE PROJEC-TION HEADER
40
WRITE HEADINGS AND COL-UMN TITLES
50
COMPUTE AVER-AGE ANNUAL GEOMETRIC MEAN
COMPUTE GEO-METRIC MEAN FOR AVERAGING TIME K
COMPUTE FRE-QUENCY FOR MAXIMUM CON-CENTRATION
A/3


A/3
CALL ZVALU2 (FREQ, ZFREQ)
COMPUTE MAXIMUM CONCENTRATION
INITIALIZE PERCENTILE LOOP INDEX N
COMPUTE FREQUENCY FOR NTH PERCENTILE
FREQUENCY 0
NO
ZERO NTH PERCENTILE CONCENTRATION OUTPUT
YES
55
CALL ZVALU2 (FREQ, ZFREQ)
COMPUTE NTH PERCENTILE CONCENTRATION OUTPUT
WRITE LTH RECEPTOR DATA LINE
INCREMENT RECEPTOR INDEX L
ALL RECEPTORS
NO
C/1
YES
A/4


A/4
WRITE LAST LINE FOR KTH AVERAGING TIME TABLE
INCREMENT AVERAGE TIME INDEX K
C/4
ALL AVERAGE TIMES ?
NO
B/1
B/4
YES
RETURN

```
      SUBROUTINE  STATS                                                      STAT    1
C                                                                            STAT    2
      DIMENSION CPER(3)                                                      STAT    3
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),     STAT    4
     .    KREG(3,10),NREGON,NCAS(3),IPJN(10),ISCEPR,NSCALE,IPRJ,NGAS(3)     STAT    5
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)          STAT    6
      COMMON /STAT/ AVRGTM(3,2),STANDV(12,2),ISEL12(12,2),NSEL12,            STAT    7
     1              PERCNT(3,2),XP(2,12),ICNT12                             STAT    8
      REAL*8 A(4)/'SO2     ','        ','PARTICUL','ATES    '/              STAT    9
C                                                                            STAT   10
C  SEL12 WILL COMPUTE,THE GEOMETRIC MEAN (GEOM), THE MAXIMUM                 STAT   11
C     CONCENTRATION (CMAX),FOR 3 AVERAGING TIMES PER POLLUTANT               STAT   12
C                                  FOR THE 12 SELECTED RECEPTORS.            STAT   13
      IF (ISEL12(1,IPOL) .EQ. 0) GO TO 300                                   STAT   14
C                                                                            STAT   15
C  COMPUTE TOTAL TIME                                                        STAT   16
C                                                                            STAT   17
      TTIME = 8760.                                                          STAT   18
C                          SET AVE. TIME LOOP                                STAT   19
      DO  10 K = 1,3                                                         STAT   20
C                      TEST FOR  NUMBER OF AVE.TIMES                         STAT   21
      IF (AVRGTM(K,IPOL) .LE. 0.) GO TO 30                                   STAT   22
      NAVE = K                                                               STAT   23
   10 CONTINUE                                                               STAT   24
C                           START AVE. TIME LOOP.                            STAT   25
   30 DO 200 K = 1,NAVE                                                      STAT   26
C                              SET 12 RECEPTOR LOOP.                         STAT   27
      DO 199 L = 1,12                                                        STAT   28
C                         GET RECEPTOR NUMBER FOR  POLUT                     STAT   29
      IRECEP = ISEL12(L,IPOL)                                                STAT   30
      IF(IRECEP .LE. 0) GO TO 200                                            STAT   31
C                                                                            STAT   32
C                           COMPUTE STAND DEV. FOR AVE. TIME K.              STAT   33
      SIGN = STANDV(L,IPOL)**(SQRT(ALOG(TTIME/AVRGTM(K,IPOL))                STAT   34
     1        / ALOG(TTIME       / 24.)))                                    STAT   35
C  COMPUTE EXPONENT FOR CONVERTING GEOM. MEAN TO AVE. TIME K.                STAT   36
      EXP = (ALOG(AVRGTM(K,IPOL)/24.) * (.5 * ALOG(STANDV(L,IPOL))))        STAT   37
     1       / ALOG(TTIME       / 24.)                                       STAT   38
      IF (L .GT. 1) GO TO 50                                                 STAT   39
C                                                                            STAT   40
C                                      WRITE HEADER LINE.                    STAT   41
      J3 = IPOL * 2 - 1                                                      STAT   42
      J4 = J3 + 1                                                            STAT   43
      WRITE(6,990) REGION,DATE                                               STAT   44
      IF (IPRJ .EQ. 0) GO TO 40                                              STAT   45
      WRITE (6,888)                                                          STAT   46
   40 WRITE (6,999) (A(M),M=J3,J4)                                           STAT   47
C                                                                            STAT   48
C   WRITE AVE. TIME                                                          STAT   49
      WRITE (6,991) AVRGTM(K,IPOL)                                           STAT   50
      WRITE(6,993)                                                           STAT   51
      WRITE (6,995)                                                          STAT   52
  995 FORMAT(' ',T10,'|',T12,'RECEPTOR |',T52,'EXPECTED STATISTICAL PARASTAT   53
     1METERS',T114,'|',T117,'STANDARD',T129,'|')                             STAT   54
```


NOT REPRODUCIBLE

```
      WRITE (6,996)                                                     STAT  55
  996 FORMAT('+',T21,23('____'),'__')                                   STAT  56
      WRITE (6,994)                                                     STAT  57
      WRITE (6,997) (PERCNT(N,IPOL),N=1,3)                              STAT  58
  997 FORMAT('+',T24,'ARITHMETIC',T39,'GEOMETRIC',T56,'MAXIMUM',T72,    STAT  59
     1    F5.1,T78,'%',T88,F5.1,T94,'%',T104,F5.1,T110,'%',              STAT  60
     2    T117,'GEOMETRIC')                                             STAT  61
      WRITE (6,994)                                                     STAT  62
      WRITE (6,998)                                                     STAT  63
  998 FORMAT('+',T12,'NUMBER',T27,'MEAN',T42,'MEAN',T53,'CONCENTRATION',STAT  64
     1  T68,'CONCENTRATION',T84,'CONCENTRATION',T100,'CONCENTRATION',    STAT  65
     2  T117,'DEVIATION')                                              STAT  66
      WRITE (6,993)                                                     STAT  67
C                                                                       STAT  68
C  COMPUTE GEOM. MEAN  USING ARITH. MEAN (XP)                           STAT  69
   50 GEOM = XP(IPOL,L) / STANDV(L,IPOL)**(.5*ALOG(STANDV(L,IPOL)))     STAT  70
C                                                                       STAT  71
C  COMPUTE  GEOM. MEAN AT AVE. TIME K                                   STAT  72
      GEOM = GEOM * STANDV(L,IPOL)**EXP                                 STAT  73
C                                                                       STAT  74
C  COMPUTE MAXIMUM CONCENTRATION FOR AVERAGE TIME K                     STAT  75
C                                                                       STAT  76
      FREQ = 0.6 / (TTIME       / AVRGTM(K,IPOL))                       STAT  77
C                                                                       STAT  78
      CALL ZVALU2(FREQ,ZFREQ)                                           STAT  79
C                                                                       STAT  80
      CMAX = GEOM * SIGK**ZFREQ                                         STAT  81
C                                                                       STAT  82
C  COMPUTE PERCENTILE CONCENTRATION FOR 3 PERCENTILES.                  STAT  83
C                                                                       STAT  84
      DO 60 N = 1,3                                                     STAT  85
      FREQ = PERCNT(N,IPOL) / 100.                                      STAT  86
C                                                                       STAT  87
C                     TEST FOR AN M PERCENTILE,SET O/P TO 0 IF M % = 0. STAT  88
      IF (FREQ .GT. 0.) GO TO 55                                        STAT  89
      CPER(N) = 0.                                                      STAT  90
      GO TO 60                                                          STAT  91
C                                                                       STAT  92
   55 CALL ZVALU2(FREQ,ZFREQ)                                           STAT  93
      CPER(N) = GEOM * SIGK**ZFREQ                                      STAT  94
   60 CONTINUE                                                          STAT  95
C                                                                       STAT  96
C             WRITE O/P DATA LINE                                       STAT  97
      WRITE(6,994)                                                      STAT  98
      WRITE(6,994)                                                      STAT  99
      WRITE (6,992) IRECEP,XP(IPOL,L),GEOM,CMAX,CPER,SIGK               STAT 100
      WRITE(6,993)                                                      STAT 101
C                                                                       STAT 102
  199 CONTINUE                                                          STAT 103
      WRITE(6,994)                                                      STAT 104
      WRITE(6,993)                                                      STAT 105
  200 CONTINUE                                                          STAT 106
  300 CONTINUE                                                          STAT 107
C                                                                       STAT 108
      RETURN                                                            STAT 109
C                                                                       STAT 110
C                                                                       STAT 111
  990 FORMAT('1',T31,18A4,T109,5A4)                                     STAT 112
  888 FORMAT('0',T66,'PROJECTED')                                       STAT 113
  999 FORMAT('0',        T51,'STATISTICAL DATA FOR SELECTED RECEPTORS', STAT 114
     *   //T20,'ANNUAL',3X,2A8//                                       STAT 115
     *    T20,'MICROGRAMS PER CUBIC METER'/)                          STAT 116
C                                                                       STAT 117
  991 FORMAT(' ',T20,'AVERAGING TIME ',F6.1,' HOURS'  //)               STAT 118
C                                                                       STAT 119
  992 FORMAT('+',T14,I3,T25,F5.0,T40,F5.0,T55,F5.0,T71,F5.0,T87,F5.0,   STAT 120
     1          T103,F5.0,T120,F5.2)                                   STAT 121
 '993 FORMAT('+',T10,30('____'))                                        STAT 122
  994 FORMAT(' ',T10,'|',T21,'|',T36,'|',T51,'|',T67,'|',T83,'|',       STAT 123
     1          T99,'|',T114,'|',T129,'|')                             STAT 124
C                                                                       STAT 125
      END                                                               STAT 126
```


NOT REPRODUCIBLE

Subprogram Name

ƵVALU2

Purpose

To compute a reduced normal variate for a given frequency.

Calling Sequence

Call ƵVALU2 (FREQ, ƵFREQ)

Computer/Language

IBM 360/FORTRAN IV G LEVEL 18

Input

Calling Sequence FREQ - Frequency

Output

Calling Sequence ƵFREQ - Reduced normal variate.

Procedure

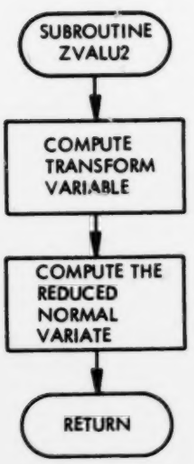
The reduced normal variate is approximated using the equation

$$n = \sqrt{Ln(1/q^2)}$$ where q is the frequency and n is an approximation of the normal function,

then, using n,

$$Z = n - (a_0+a,n+a_2n^2/1-b,n+b,n^2+b,n^3)$$

where Z is the reduced normal variate.


SUBROUTINE ZVALU2
COMPUTE TRANSFORM VARIABLE
COMPUTE THE REDUCED NORMAL VARIATE
RETURN

NOT REPRODUCIBLE

```
      SUBROUTINE ZVALU2(P,Z)                                              ZVAL   1
      DATA A0,A1,A2,B1,B2,B3/2.515517,0.802853,0.010328,1.432788,         ZVAL   2
     1   0.189269,0.001308/                                               ZVAL   3
C                                                                         ZVAL   4
C     P=PERCENT VALUE EXPRESSED IN DECIMAL                                ZVAL   5
C                                                                         ZVAL   6
C     Z=REDUCED NORMAL VARIATE                                            ZVAL   7
C                                                                         ZVAL   8
      U=SQRT(ALOG(1./(P*P)))                                              ZVAL   9
      Z = U - (A0+U*(A1+U*A2))/(1. + U*(B1+U*(B2+U*B3)))                  ZVAL  10
      RETURN                                                              ZVAL  11
      END                                                                 ZVAL  12
```

Subprogram Name

SUMMRY

Purpose

Summarizes source emission per category for entire region.

Calling Sequence

CALL SUMMRY; Arguments: None

Computer Language

IBM 360 - FORTRAN IV G LEVEL 18

Input

None

Output

1. Control Strategy Summary Report

Subroutines

None

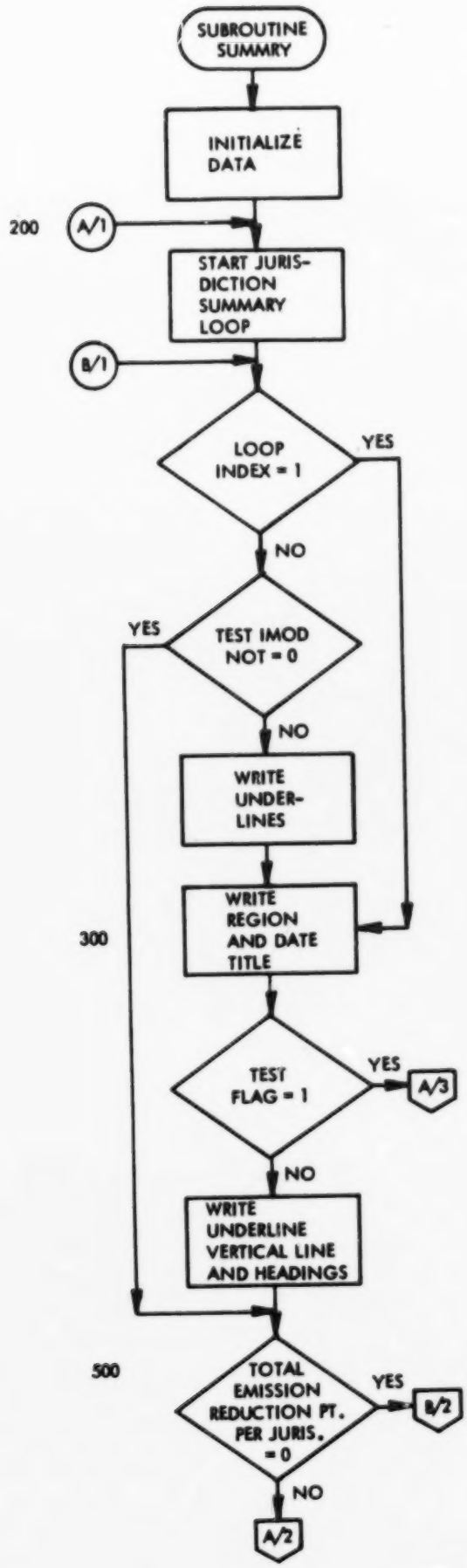
Procedure

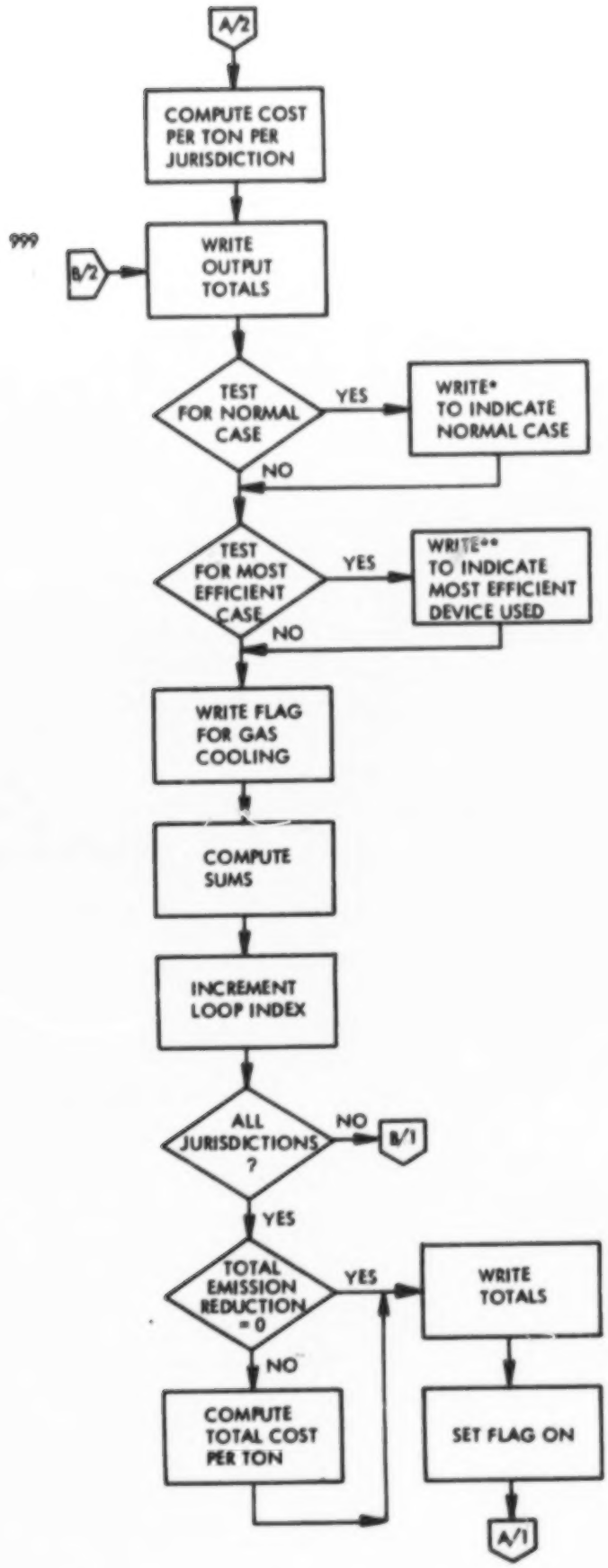
A regional summary showing totals for each jurisdiciton is printed using data from the jurisdiction summaries.

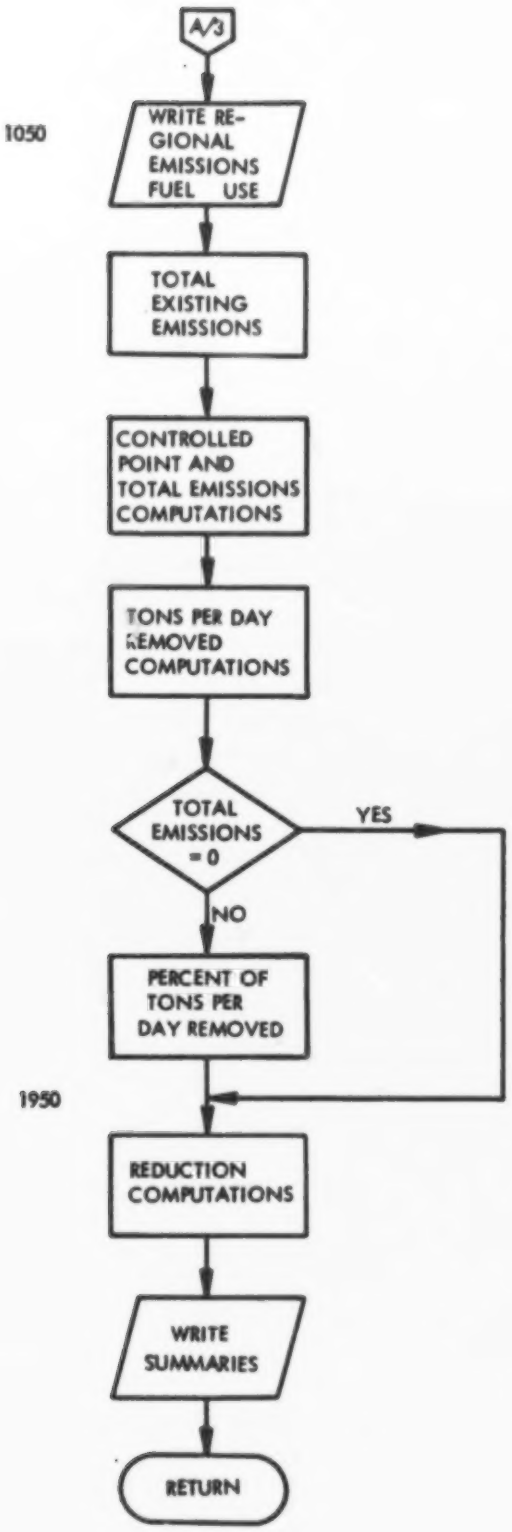
Input/Output Variables

Common

Variables Name	Description
ITNSRC	Total number of point sources
ITNCON	Total number of controlled point sources
TSEXEM	Total existing emissions (point source)
TEMRED	Total reduction of emissions (point source)
TSCOST	Total cost of reduction (point source)
TEXAR	Total existing emission (area sources)
TCAR	Total reduction of emission (area sources)


SUBROUTINE SUMMRY
INITIALIZE DATA
200
A/1
START JURIS-DICTION SUMMARY LOOP
B/1
LOOP INDEX = 1
YES
NO
YES
TEST IMOD NOT = 0
NO
WRITE UNDER-LINES
300
WRITE REGION AND DATE TITLE
TEST FLAG = 1
YES
A/3
NO
WRITE UNDERLINE VERTICAL LINE AND HEADINGS
500
TOTAL EMISSION REDUCTION PT. PER JURIS. = 0
YES
B/2
NO
A/2


A/2
COMPUTE COST PER TON PER JURISDICTION
999
B/2
WRITE OUTPUT TOTALS
TEST FOR NORMAL CASE
YES
WRITE* TO INDICATE NORMAL CASE
NO
TEST FOR MOST EFFICIENT CASE
YES
WRITE** TO INDICATE MOST EFFICIENT DEVICE USED
NO
WRITE FLAG FOR GAS COOLING
COMPUTE SUMS
INCREMENT LOOP INDEX
ALL JURISDICTIONS ?
NO
B/1
YES
TOTAL EMISSION REDUCTION = 0
YES
WRITE TOTALS
NO
COMPUTE TOTAL COST PER TON
SET FLAG ON
A/1


A/3
1050
WRITE RE-
GIONAL
EMISSIONS
FUEL USE
TOTAL
EXISTING
EMISSIONS
CONTROLLED
POINT AND
TOTAL EMISSIONS
COMPUTATIONS
TONS PER DAY
REMOVED
COMPUTATIONS
TOTAL
EMISSIONS
= 0
YES
NO
PERCENT OF
TONS PER
DAY REMOVED
1950
REDUCTION
COMPUTATIONS
WRITE
SUMMARIES
RETURN

```
      SUBROUTINE SUMMPY                                                 SUMM   1
C                                                                       SUMM   2
C     CONTROL SUMMARY PROGRAM                                           SUMM   3
C                                                                       SUMM   4
      DIMENSION TEX(2),TCA(2)                                           SUMM   5
      DIMENSION SCPT(10),GCAS(2)                                        SUMM   6
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASFAC(10,2),ASCALE(2,500),    SUMM   7
     .             KSID(2,500) IFAC                                     SUMM   8
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3),SUMM   9
     .    KREG(3,10),NREGON,NCAS(3),IPJN(10),ISCERR,NSCALE,IPRJ,NGAS(3) SUMM  10
     .,IG(10),ICS(10),NCS(10)                                           SUMM  11
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)     SUMM  12
      COMMON /SRCCON/ BKGRND(2),ASPRJ(10,2),SCONTR(2)                   SUMM  13
      COMMON /SUMS/ SCONEM(3),SEXEM(3),NCON(3),AVRGLC(2),SFQTY(4),      SUMM  14
     1 ITNSRC(10),ITNCON(10),TSEXEM(10),TSCOST(10),SCOSTI(3),TEMRED(10),SUMM  15
     . TFQTY(4),SAEM(3),TSAEM(10)                                       SUMM  16
      DATA GCAS/' ','G'/                                                SUMM  17
      TEMF  =0.                                                         SUMM  18
      TSCOS =0.                                                         SUMM  19
      TSEX  =0.                                                         SUMM  20
          TSAE = 0.                                                     SUMM  21
      ITNC  =0                                                          SUMM  22
      ITNS  =0                                                          SUMM  23
      TCPT=0.                                                           SUMM  24
      IMOD = 0                                                          SUMM  25
      II = 20                                                           SUMM  26
      ITFLG = 0                                                         SUMM  27
      TEX(IPOL) = 0.0                                                   SUMM  28
      TCA(IPOL) = 0.0                                                   SUMM  29
  200 CONTINUE                                                          SUMM  30
      DO 1000 I=1,IJUR                                                  SUMM  31
      SCPT(I)=0.                                                        SUMM  32
      IF (I .EQ. 1) GO TO 300                                           SUMM  33
      IMOD = MOD(I,II)                                                  SUMM  34
      IF (IMOD .NE. 0) GO TO 500                                        SUMM  35
C                                                                       SUMM  36
C     WRITE TITLE AND HEADINGS                                          SUMM  37
C                                                                       SUMM  38
      WRITE(6,7)                                                        SUMM  39
      II = II + 20                                                      SUMM  40
  300 CONTINUE                                                          SUMM  41
    9 WRITE (6,9000) REGION, DATE                                       SUMM  42
 9000 FORMAT('1',T33,18A4,T109,5A4/)                                    SUMM  43
      WRITE (6,10)                                                      SUMM  44
   10 FORMAT (    T44,' C O N T R O L  S T R A T E G Y  S U M M A R Y   SUMM  45
     1'////)                                                            SUMM  46
      IF (ITFLG .EQ. 1) GO TO 1050                                      SUMM  47
C                                                                       SUMM  48
C     WRITE UNDERLINE                                                   SUMM  49
C                                                                       SUMM  50
      WRITE (6,1)                                                       SUMM  51
    1 FORMAT (T6,31('____'))                                            SUMM  52
      WRITE (6,2)                                                       SUMM  53
    2 FORMAT (T5,'|',T28,'|',T42,'|',T56,'|',T75,'|',T95,'|',T112,'|',  SUMM  54
```

NOT REPRODUCIBLE

```
     1        T130,'|')                                                        SUMM  55
      WRITE (6,2)                                                            SUMM  56
      WRITE (6,3)                                                            SUMM  57
    3 FORMAT ('+',T9,'JURISDICTION',   T33,'TOTAL',T47,'TOTAL',T57,'EMISSUMM  58
     1SIONS',T76,'CONTROLLED EMISSION',T100,'ANNUAL',T115,                   SUMM  59
     2'CONTROL COST')                                                        SUMM  60
      WRITE (6,2)                                                            SUMM  61
      WRITE (6,4)                                                            SUMM  62
    4 FORMAT ('+',T30,'APPLICABLE',T44,'CONTROLLED',T64,'FOR'                SUMM  63
     1,T80,'REDUCTION',T97,'CONTROL COST',T117,'PER TON')                    SUMM  64
      WRITE (6,2)                                                            SUMM  65
      WRITE (6,5)                                                            SUMM  66
    5 FORMAT ('+',T11,'AND NUMBER',T29,'POINT SOURCES',T43,'POINT SOURCESUMM  67
     1S',T59,'POINT SOURCES',T80,'(TONS/DAY)',T96,'(MILLIONS OF $)',T114SUMM  68
     2,'REMOVED ($/TON)')                                                    SUMM  69
      WRITE (6,2)                                                            SUMM  70
      WRITE (6,6)                                                            SUMM  71
    6 FORMAT ('+',T61,'(TONS/DAY)')                                          SUMM  72
      WRITE(6,2)                                                             SUMM  73
      WRITE(6,11)                                                            SUMM  74
   11 FORMAT('+',T57,'ALLOWED | EXISTING')                                   SUMM  75
      WRITE (6,7)                                                            SUMM  76
    7 FORMAT ('+',T6,31('____'))                                             SUMM  77
  500 CONTINUE                                                               SUMM  78
      IF (TEMRED(I).EQ.0.) GO TO 999                                         SUMM  79
      SCPT(I)=TSCOST(I)/(TEMRED(I)*365.)                                     SUMM  80
C                                                                            SUMM  81
C     WRITE OUTPUT                                                           SUMM  82
C                                                                            SUMM  83
  999 WRITE (6,2)                                                            SUMM  84
      WRITE(6,8)(PJNAME(J,I),J=1,5),ITNSRC(I),ITNCON(I),TSAEM(I),            SUMM  85
     .TSEXEM(I),TEMRED(I),TSCOST(I),SCPT(I)                                  SUMM  86
    8 FORMAT('+',T7,5A4,T33,I4,T47,I4,T57,F8.2,T67,F8.2,          T82,F7.2SUMM  87
     .,T100,-6PF7.3,T116,CPF10.2)                                            SUMM  88
      WRITE (6,2)                                                            SUMM  89
      WRITE (6,101) I                                                        SUMM  90
  101 FORMAT ('+',T13,I3)                                                    SUMM  91
C                                                                            SUMM  92
      IF (  ICS(I).EQ.2) WRITE (6,450)                                       SUMM  93
C                                                                            SUMM  94
      IF ( ACS(I) .EQ. 1) WRITE(6,451)                                       SUMM  95
  450 FORMAT ('+',T45, '*')                                                  SUMM  96
  451 FORMAT('+',T51,'**')                                                   SUMM  97
  452 FORMAT('+',T43,A1)                                                     SUMM  98
      WRITE (6,452) GCAS(IG(I)+1)                                            SUMM  99
C                                                                            SUMM 100
C     COMPUTE SUMS                                                           SUMM 101
C                                                                            SUMM 102
      ITNS  =ITNS + ITNSRC(I)                                                SUMM 103
      ITNC  =ITNC + ITNCON(I)                                                SUMM 104
      TSEX  =TSEX + TSEXEM(I)                                                SUMM 105
      TSAE = TSAE + TSAEM(I)                                                 SUMM 106
      TEMR  =TEMR + TEMRED(I)                                                SUMM 107
      TSCOS =TSCOS + TSCOST(I)                                               SUMM 108
      TEX(IPOL) = TEX(IPOL) + TEXAR(IPOL,I)                                  SUMM 109
```

NOT REPRODUCIBLE

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      TCA(IPOL) = TCA(IPOL) + TCAR(IPOL,I)                              SUMM 110
 1000 CONTINUE                                                          SUMM 111
      IF (TEMR  .EQ.0.) GO TO 1001                                      SUMM 112
      TCPT=TSCOS /(TEMR  *365.)                                         SUMM 113
 1001 CONTINUE                                                          SUMM 114
C                                                                       SUMM 115
C     WRITE SUMS                                                        SUMM 116
C                                                                       SUMM 117
      WRITE (6,2)                                                       SUMM 118
      WRITE (6,7)                                                       SUMM 119
      WRITE (6,2)                                                       SUMM 120
      WRITE (6,2)                                                       SUMM 121
      WRITE (6,96) ITNS,ITNC,TSAE,TSEX,TEMR,TSCOS,TCPT                  SUMM 122
   96 FORMAT ('+',T9,'STRATEGY TOTAL',T33,I4,T47,I4,T57,F8.2,T67,F8.2,  SUMM 123
     .          T82,F7.2,T100,-6PF7.3,T116,0PF10.2)                    SUMM 124
      WRITE (6,2)                                                       SUMM 125
      WRITE (6,7)                                                       SUMM 126
      WRITE (6,195)                                                     SUMM 127
  195 FORMAT(T51,'(*) SOME SOURCES COULD NOT ATTAIN THE ALLOWABLE EMISSISUMM 128
     1ON'/T55,'(**) NO DEVICE AVAILABLE  TO CONTROL SOME SOURCES.'/T55, SUMM 129
     .'(G) GAS COOLING APPLIED TO SOME SOURCE(S).')                     SUMM 130
C                                                                       SUMM 131
C     WRITE REGIONAL EMISSIONS AND REGIONAL CONTROL COST-EFFECTIVENSS    SUMM 132
C                                                                       SUMM 133
      ITFLG = 1                                                         SUMM 134
      GO TO 200                                                         SUMM 135
 1050 CONTINUE                                                          SUMM 136
      WRITE (6,97)                                                      SUMM 137
   97 FORMAT(////T25,'R E G I O N A L  E M I S S I O NS',T89,'R E G I O SUMM 138
     .N A L  F U E L  U S E'/'+',T10,65('_'),T81,43('_'))               SUMM 139
C                                                                       SUMM 140
C     TOTAL EXISTING EMISSION COMPUTATION                               SUMM 141
C                                                                       SUMM 142
      TOTALE=TSEX  +TEX(IPOL)                                           SUMM 143
C                                                                       SUMM 144
C     CONTROLLED POINT AND TOTAL EMISSION COMPUTATION                   SUMM 145
C                                                                       SUMM 146
      TPOINT=TSEX  -TEMR                                                SUMM 147
      TOTALC=TPOINT+TCA (IPOL)                                          SUMM 148
C                                                                       SUMM 149
C     TONS/DAY REMOVED COMPUTATION AND PERCENTAGE                       SUMM 150
C                                                                       SUMM 151
      TONSR=TOTALE-TOTALC                                               SUMM 152
      PERCNT = 0.0                                                      SUMM 153
      IF (TOTALE .EQ. 0.0) GO TO 1950                                   SUMM 154
      PERCNT=TONSR/TOTALE*100.                                          SUMM 155
 1950 CONTINUE                                                          SUMM 156
C                                                                       SUMM 157
C     REDUCTION COMPUTATION                                             SUMM 158
C                                                                       SUMM 159
      REDUCE=0.                                                         SUMM 160
      IF (TEMR  .EQ.0.) GO TO 1969                                      SUMM 161
      REDUCE=TSCOS /(TEMR  *365.)                                       SUMM 162
 1969 REDUCG=0.                                                         SUMM 163
      IF (AVEGLC(IPOL).EQ.0.) GO TO 1970                                SUMM 164
```

NOT REPRODUCIBLE

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      REDUCG=TSCOS /AVRGLC(IPOL)                                          SUMM 165
1970  CONTINUE                                                            SUMM 166
      WRITE(6,105)TFQTY(1),TSEX,TPOINT,TFQTY(2),TEX(IPOL),TCA(IPOL),      SUMM 167
     .TFQTY(3),TFQTY(4),TOTALE,TOTALC,TCNSR,PERCNT                        SUMM 168
 105  FORMAT(///T10,'EXISTING EMISSIONS (TONS/DAY)',T44,'CONTROLLED EMISSSUMM 169
     .IONS (TONS/DAY)',T86,'COAL (TONS/DAY)',T101,10('.'),F13.3//T12,'POSUMM 170
     .INT SOURCES....',F6.1,T47,'POINT SOURCES.... ',F6.1,T86,'RESID. OISUMM 171
     .L (GAL/DAY).....',F13.3//T12,'AREA SCURCES.....', F6.1,T47,'AREA SSUMM 172
     .OURCES..... ',F6.1,T86,'DIST. OIL (GAL/DAY).....',F13.3/T29,8('_'SUMM 173
     .),T64,8('_')/T86,'GAS (100 CU. FT./DAY)...',F13.3/T12,'TOTAL EMISSUMM 174
     .SIONS..',F7.1,T47,'TOTAL EMISSIONS..',F7.1//T10,'CONTROLLED REDUCTSUMM 175
     .ION..',F6.1,T45,'PERCENTAGE REDUCTION... ',F4.1,' %')              SUMM 176
      WRITE (6,106) REDUCE,REDUCG                                         SUMM 177
 106  FORMAT (////T31,'R E G I O N A L  C O N T R O L  C O S T - E F F ESUMM 178
     1 C T I V E N E S S'/T30,17('----'),'-'///T21,'REDUCTION IN TOTAL PSUMM 179
     .OINT SOURCE EMISSION RATE . . . . . ',F7.2,' DOLLARS/TSUMM 180
     .ON'//T21,'REDUCTION IN GROUND LEVEL CONCENTRATION . . . ',F11.0    SUMM 181
     4,' DOLLARS/MICROGRAM/CUBIC METER')                                 SUMM 182
      RETURN                                                              SUMM 183
      END                                                                 SUMM 184
```

Subprogram Name

PROJEC

Purpose

To produce an output listing of "Projected Allowable Emission Rates" and "Projected Existing Emission Rates" for each point and area source, and totalled by Political Jurisdiction.

Calling Sequence

Call PROJEC

Computer Language

IBM 360 - Fortran IV Level 18

Input

1. Point Source Data in Political Jurisdiction - Source ID Order (tape).
2. Area Source Data in Political Jurisdiction - Source ID Order (tape).
3. Projection Scale Factors Per Source (card).

Output

1. Projected Emission Inventory Report (printer).
2. Projected Emission Summary Report (printer).

Procedure

First, the program reads the card file. The Projected Scale Factors are read into the array SCALE, and the Source ID are read into the array JSID. After all cards are read the program reads the Point Source file and searches the JSID array to see whether a scale factor exists for this source. If a matching ID is found, the Projected Existing Emission is computed (EXEM * SCALE(IPØL,N)) and the Projected Allowable Emission is computed (AEM * SCALE(IPØL,N)). These are then added into the corresponding cells (subscripted by Political Jurisdiction) of the two arrays containing the totalled quantities. They (the two computed quantities) are also output to the printer and the entire cycle repeated for the next Point Source.

If a matching ID is not found, the process described above is followed for the Existing and Allowable Emission Rates (EXEM,AEM).

After the last record on the Point Source file is read, the program reads the Area Source file. If IPROJ=2 or if no matching ID is found in JSID, then the Allowable and Existing Emission Rates are scaled by the appropriate cell from the array ASPRJ (ASPRJ and IPROJ are found in COMMON). If a matching ID is found, the same procedure described in handling a matching ID from the Point Source file is followed.

After all records on the Area Source file are read, the program prints out the Projected Emission Summary Report after which the program terminates.

Subroutines

None

Input/Output Variables

Input

1. Projection Scale Factor File

CC	Variable Name	Description	Format
1-3	IRGN	Region Number	I3
4-7	JSID(1,N)	SIC Number	I4
8-12	JSID(2,N)	Site Process Number	I5
13-24	SCALE(1,N)	Sulfur Dioxide Projection Factors	F12.2
25-36	SCALE(2,N)	Particle Projection Factors	F12.2

2. Point Source Data File

Variable Name	Description	Format
IREGON	Region Number	Binary
ISIC	SIC Number	Binary
ISITE	Site/Process Number	Binary
ICID	Device Number	Binary(not used)
IPJ	Political Jurisdiction	Binary
AEM	Allowable Emission	Fl. Pt.
EXEM	Existing Emission	Fl. Pt.

3. Area Source Date File

Variable Name	Description	Format
ISIC	SIC Number	Binary
ISITE	Site/Process Number	Binary
IPJ	Political Jurisdiction	Binary

Area Source Data File (Cont.)

Variable Name	Description	Format
AEM	Allowable Emission	Fl. Pt.
EXEM	Existing Emission	Fl. Pt.

Output

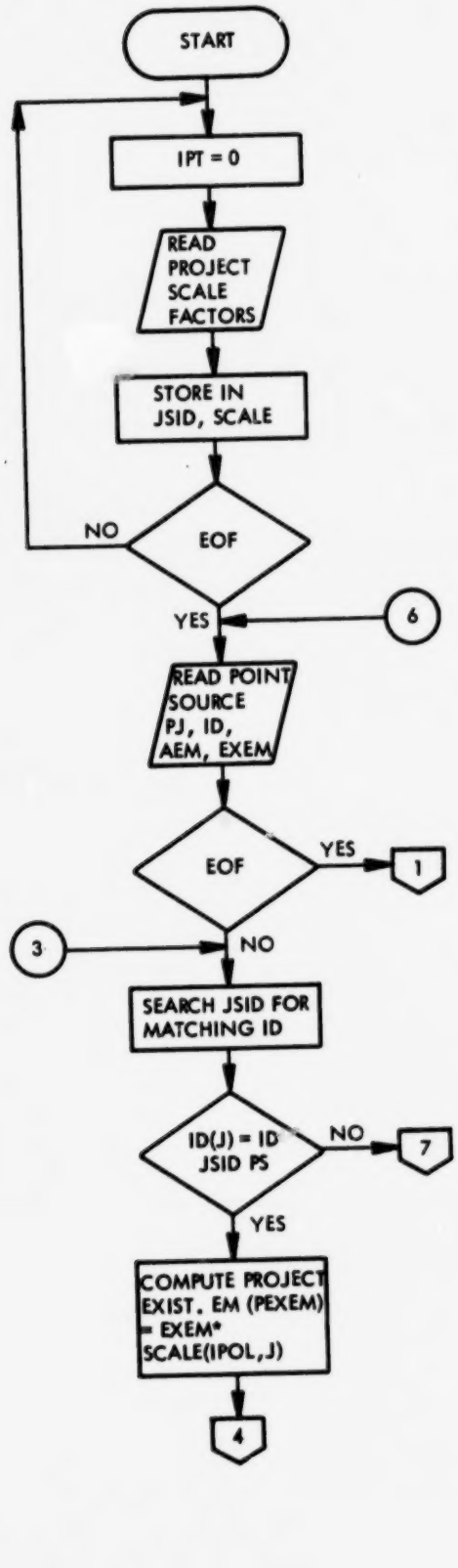
1. Projected Emission Inventory Report.

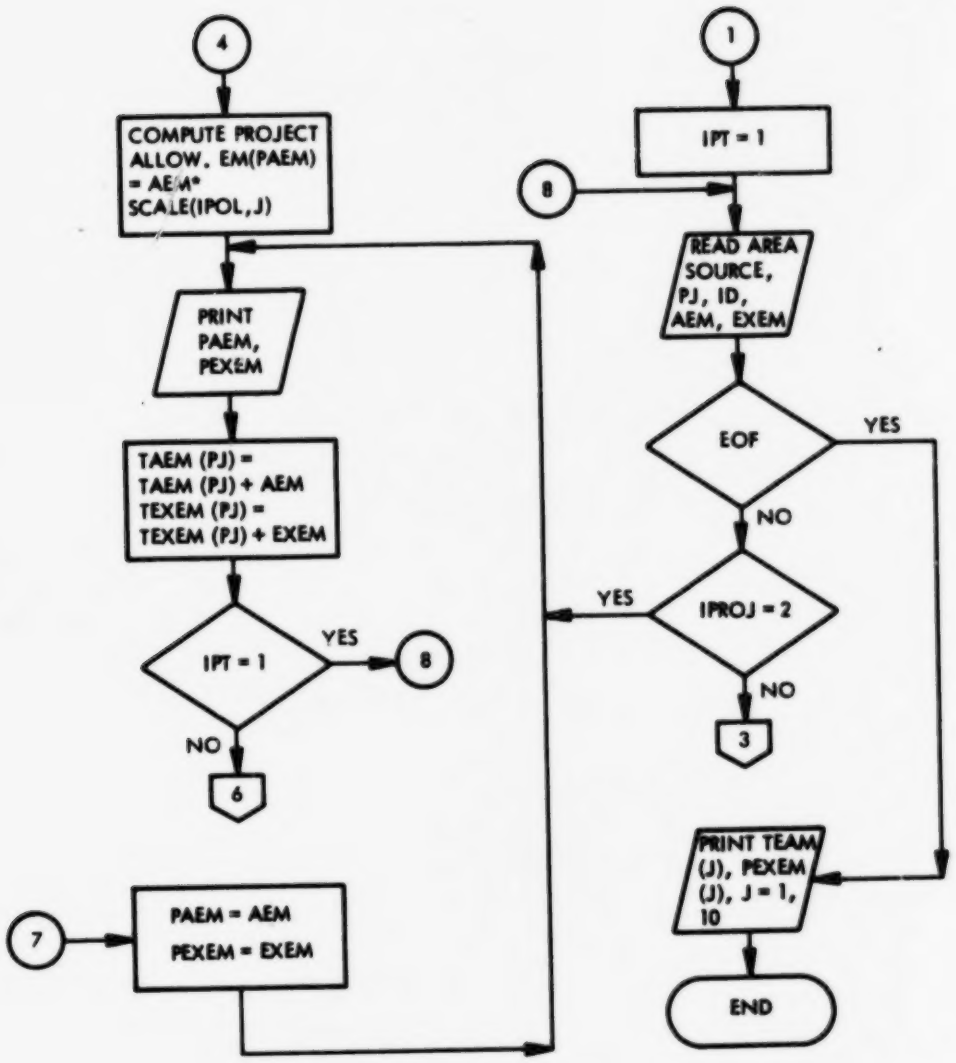
2. Projected Emission Summary Report.

3. Error Messages.

   3.1 RST04 - NO END CARD. PROJECTION REPORTS TERMINATED.

   This message prints out if an END card is missing from the Projected Scale Factor cards. An END card should be the last card in the deck and should have spaces in card columns 1 - 3. If the card is missing, the program terminates.


START
IPT = 0
READ PROJECT SCALE FACTORS
STORE IN JSID, SCALE
EOF
NO
YES
6
READ POINT SOURCE PJ, ID, AEM, EXEM
EOF
YES
1
3
NO
SEARCH JSID FOR MATCHING ID
ID(J) = ID JSID PS
NO
7
YES
COMPUTE PROJECT EXIST. EM (PEXEM) = EXEM* SCALE(IPOL,J)
4


4
COMPUTE PROJECT ALLOW. EM(PAEM) = AEM* SCALE(IPOL,J)
PRINT PAEM, PEXEM
TAEM (PJ) = TAEM (PJ) + AEM
TEXEM (PJ) = TEXEM (PJ) + EXEM
IPT = 1
YES
8
NO
6
7
PAEM = AEM
PEXEM = EXEM
1
IPT = 1
8
READ AREA SOURCE, PJ, ID, AEM, EXEM
EOF
YES
NO
IPROJ = 2
YES
NO
3
PRINT TEAM (J), PEXEM (J), J = 1, 10
END

```
      SUBROUTINE PROJEC                                                  PROJ   1
C  THIS SUBROUTINE PRINTS THE 'EMISSIONS INVENTORY REPORT'               PROJ   2
C  AND THE 'EMISSIONS SUMMARY REPORT'                                    PROJ   3
      COMMON /PROJ/ JSID(2,2000),SCALE(2,2000)                           PROJ   4
      COMMON /SRCE/ ISC(2000),ISIT(2000),AEMI(2000),ICD(2000),HS(2000),  PROJ   5
     +   TEMP(2000),DIA(2000),VEL(2000),EXEMI(2000),KSRC,NS              PROJ   6
      COMMON/AREA/ TEXAR(2,10),TCAR(2,10),ASPAC(10,2),ASCALE(2,500),     PROJ   7
     +             KSID(2,500),IFAC                                      PROJ   8
      COMMON/FLAGS/ IPUNCH,IEND,IPOL,    ICASE(3),NSORCE,NRECEP,NSRC(3), PROJ   9
     +    KREG(3,10),NREGON,NCAS(3),IPJN(10),ISCEPR,NSCALE,IPRJ,NGAS(3) PROJ  10
      COMMON /MISC/ REGION(18),PJNAME(5,10),IPJ,IJUR,IPROJ, DATE(5)      PROJ  11
      COMMON /SPCCON/ BKGRND(2),ASPRJ(10,2),SCCNTR(2)                    PROJ  12
      DIMENSION TEXEM(10),TAEM(10)                                       PROJ  13
      DO 50 J=1,10                                                       PROJ  14
      TAEM(J)=0.0                                                        PROJ  15
   50 TEXEM(J)=0.0                                                       PROJ  16
      M=0                                                                PROJ  17
      IPT = 0                                                            PROJ  18
      DO 110 ISCALE = 1,2000                                             PROJ  19
      READ(5,100,END=222)IRGN,(JSID(N,ISCALE),N=1,2),(SCALE(N,ISCALE),   PROJ  20
     1N=1,2)                                                             PROJ  21
  100 FORMAT(I3,I4,I5,2F12.2)                                            PROJ  22
          NS = ISCALE                                                    PROJ  23
      IF(IRGN.EQ.0)GO TO 120                                             PROJ  24
  110 CONTINUE                                                           PROJ  25
  120 K=1                                                                PROJ  26
          IRGN = NREGON                                                  PROJ  27
      WRITE(6,280)(REGION(J),J=1,18),IRGN,( DATE(J),J=1,5)               PROJ  28
  280 FORMAT('1',21X,18A4//1X,'REGION:',I4,T45,'DATE:',5A4//             PROJ  29
     11X,T21,'PROJECTED EMISSION INVENTORY')                             PROJ  30
  285 WRITE(6,290)                                                       PROJ  31
  290 FORMAT('0SOURCE',T32,'PROJECTED ALLOWABLE',T55,'PROJECTED EXISTING'PROJ  32
     1',T78,'PROJECTION'/1X,T4,'NO.',T12,'SOURCE ID',T25,'P.J.',T35,     PROJ  33
     2'EMISSION RATE',T57,'EMISSION RATE',T80,'FACTOR'/'+',T2,'______',  PROJ  34
     3T12,'_________',T25,'____',T32,4('____'),'___',T55,4('____'),'__', PROJ  35
     4T77,3('____'))                                                     PROJ  36
  121 READ(12,END=333)IREGON,ISIC,ISITE,ICID,IPJ,AEM,EXEM                PROJ  37
  122 DO 130 J=1,ISCALE                                                  PROJ  38
      IF (ISIC.EQ.JSID(1,J))GO TO 131                                    PROJ  39
      GO TO 130                                                          PROJ  40
  131 IF (ISITE.EQ.JSID(2,J))GO TO 140                                   PROJ  41
  130 CONTINUE                                                           PROJ  42
      IF (IPT.EQ.1) GO TO 200                                            PROJ  43
      TAEM(IPJ)=TAEM(IPJ)+AEM                                            PROJ  44
      TEXEM(IPJ)=TEXEM(IPJ)+EXEM                                         PROJ  45
      FACT = 1.                                                          PROJ  46
  150 WRITE(6,500)K,ISIC,ISITE,IPJ,AEM,EXEM,FACT                         PROJ  47
  500 FORMAT(2X,I4,5X,I4,I5,4X,I2,8X,F10.2,12X,F10.2,T77,F12.2)          PROJ  48
      K=K+1                                                              PROJ  49
      M=M+1                                                              PROJ  50
      IF (IPT.EQ.1)GO TO 350                                             PROJ  51
      IF (M.LE.48)GO TO 121                                              PROJ  52
      M=0                                                                PROJ  53
      WRITE (6,999)                                                      PROJ  54
```

```
800 [illegible]                                                          PROJ  55
    GO TO 265                                                            PROJ  56
222 WRITE(6,800)                                                         PROJ  57
800 FORMAT(' RST04-NO END CARD. PROJECTION REPORTS TERMINATED.')         PROJ  58
        ISCERR = 1                                                       PROJ  59
    GO TO 750                                                            PROJ  60
140 AEM=AEM*      SCALE(IPOL,J)                                          PROJ  61
    EXEM=EXEM*      SCALE(IPOL,J)                                        PROJ  62
    TAEM(IPJ)=TAEM(IPJ)+AEM                                              PROJ  63
    TEXEM(IPJ)=TEXEM(IPJ)+EXEM                                           PROJ  64
    FACT = SCALE(IPOL,J)                                                 PROJ  65
    GO TO 150                                                            PROJ  66
333 IPT=1                                                                PROJ  67
340 READ(8,END=444)ISIC,ISITE,IPJ,AEM,EXEM                               PROJ  68
    IF(IPROJ.NE.2)GO TO 122                                              PROJ  69
200 AEM=AEM*   ASPRJ(IPJ,IPOL)                                           PROJ  70
    EXEM=EXEM*   ASPRJ(IPJ,IPOL)                                         PROJ  71
    TAEM(IPJ)=TAEM(IPJ)+AEM                                              PROJ  72
    TEXEM(IPJ)=TEXEM(IPJ)+EXEM                                           PROJ  73
    FACT = ASPRJ(IPJ,IPOL)                                               PROJ  74
    GO TO 150                                                            PROJ  75
350 IF (M.LE.48)GO TO 340                                                PROJ  76
    M=0                                                                  PROJ  77
    WRITE (6,999)                                                        PROJ  78
    WRITE(6, 290)                                                        PROJ  79
    GO TO 340                                                            PROJ  80
444 WRITE(6,550)(REGION(J),J=1,18),IRGN,( DATE(J),J=1,5)                 PROJ  81
550 FORMAT('1',T23,18A4//1X,'REGION:',I4,T45,'DATE:',5A4//               PROJ  82
   11X,T21,'PROJECTED EMISSION SUMMARY'//3X,'POLITICAL',T18,             PROJ  83
   2'TOTAL PROJECTED ALLOWABLE',T47,'TOTAL PROJECTED EXISTING'/          PROJ  84
   31X,'JURISDICTION',T24,'EMISSION RATE',T52,'EMISSION RATE'/           PROJ  85
   4'+','____________',T18,'_____________________________',              PROJ  86
   5T47,'_____________________________')                                 PROJ  87
    DO 600 J=1,IJUR                                                      PROJ  88
600 WRITE(6,700)J,TAEM(J),TEXEM(J)                                       PROJ  89
700 FORMAT(6X,I2,17X,F10.2,18X,F10.2)                                    PROJ  90
750 CONTINUE                                                             PROJ  91
    RETURN                                                               PROJ  92
    END                                                                  PROJ  93
```

NOT REPRODUCIBLE

H

IMPLEMENTATION PLA

POIN

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

X (KM) | Y (KM) | P J | O

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
RATED CAP (10^6 BTU/HR)					COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)			HEAT CONTENT			COAL (TON/DAY)			RESID OIL (GAL/DAY)			DIST OIL (GAL/								
																													FUEL BURNED					

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
STK HT (FT)					STK TEMP (°F)			NORMALIZED PLM RISE (FT^2/SEC)				MAX PROC RATE (10^2 LB/HR)					MAX EXH GAS VOL (10^2 ACFM)						STK DIA (F)			STK VEL (F/S)			USE FACTOR					

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

X (KM) | Y (KM) | P J | O

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
RATED CAP (10^6 BTU/HR)					COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)			HEAT CONTENT			COAL (TON/DAY)			RESID OIL (GAL/DAY)			DIST OIL (GA								
																													FUEL BURNED					

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
STK HT (FT)					STK TEMP (°F)			NORMALIZED PLM RISE (FT^2/SEC)				MAX PROC RATE (10^2 LB/HR)					MAX EXH GAS VOL (10^2 ACFM)						STK DIA (F)			STK VEL (F/S)			USE FACTOR					

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

X (KM) | Y (KM) | P J | O

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
RATED CAP (10^6 BTU/HR)					COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)			HEAT CONTENT			COAL (TON/DAY)			RESID OIL (GAL/DAY)			DIST OIL (GA								
																													FUEL BURNED					

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	4
STK HT (FT)					STK TEMP (°F)			NORMALIZED PLM RISE (FT^2/SEC)				MAX PROC RATE (10^2 LB/HR)					MAX EXH GAS VOL (10^2 ACFM)						STK DIA (F)			STK VEL (F/S)			USE FACTOR					

B

ON PLANNING PROGRAM **DATA RECORD**

POINT

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/ DAY	CONTROL EFFICIENCY (%) SO_2	CONTROL EFFICIENCY (%) PARTICULATE	DEVICE ID	TRANS	CARD
											1
45 46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2
DIST OIL (GAL/DAY)			GAS (10^3 FT^3/DAY)	COAL / RESID OIL / DIST OIL / GAS			COAL ASH CONT (%)			TRANS	CARD
ID				SULFUR CONT (%)							
45 46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											3

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME (HRS/YR)	SHIFT/ DAY	CONTROL EFFICIENCY (%) SO_2	CONTROL EFFICIENCY (%) PARTICULATE	DEVICE ID	TRANS	CARD
											1
45 46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2
DIST OIL (GAL/DAY)			GAS (10^3 FT^3/DAY)	COAL / RESID OIL / DIST OIL / GAS			COAL ASH CONT (%)			TRANS	CARD
ID				SULFUR CONT (%)							
45 46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											3

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME HRS YR	SHIFT DAY	CONTROL EFFICIENCY (%) SO_2	CONTROL EFFICIENCY (%) PARTICULATE	DEVICE ID	TRANS	CARD
											1
5 46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2
T OIL (GAL/DAY)			GAS (10^3 FT^3/DAY)	COAL / RESID OIL / DIST OIL / GAS			COAL ASH CONT (%)			TRANS	CARD
				SULFUR CONT (%)							
46	47	48	49 50 51 52 53 54 55 56 57 58 59 60 61 62	63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
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IMPLEMENTATION

PC

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
RATED CAP (10^6 BTU/HR)						COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)																	

HEAT CONTENT

X (KM) | Y (KM) | P J

COAL (TON/DAY) | RESID OIL (GAL/DAY) | DIST O

FUEL BURNED

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
STK HT (FT)			STK TEMP (°F)			NORMALIZED PLM RISE (FT^4/SEC)			MAX PROC RATE (10^2 LB/HR)						MAX EXH GAS VOL (10^2 ACFM)									STK DIA (F)			STK VEL (F/S)			USE FACTOR			

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
RATED CAP (10^6 BTU/HR)						COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)																	

HEAT CONTENT

X (KM) | Y (KM) | P J

COAL (TON/DAY) | RESID OIL (GAL/DAY) | DIST C

FUEL BURNED

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
STK HT (FT)			STK TEMP (°F)			NORMALIZED PLM RISE (FT^4/SEC)			MAX PROC RATE (10^2 LB/HR)						MAX EXH GAS VOL (10^2 ACFM)									STK DIA (F)			STK VEL (F/S)			USE FACTOR			

1	2	3	4	5	6	7	8	9	10	11	12
REGION			SIC				SITE			PROC	

DESCRIPTIVE NAME

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
RATED CAP (10^6 BTU/HR)						COAL (10^6 BTU/TON)			RESID OIL (10^3 BTU/GAL)			DIST OIL (10^3 BTU/GAL)			GAS (BTU/FT^3)																	

HEAT CONTENT

X (KM) | Y (KM) | P

COAL (TON/DAY) | RESID OIL (GAL/DAY) | DIST

FUEL BURNED

13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
STK HT (FT)			STK TEMP (°F)			NORMALIZED PLM RISE (FT^4/SEC)			MAX PROC RATE (10^2 LB/HR)						MAX EXH GAS VOL (10^2 ACFM)									STK DIA (F)			STK VEL (F/S)			USE FACTOR			

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AIR QUALITY PLANNING PROGRAM — **DATA RECORD**

POINT

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME (HRS/YR)	SHFT/ DAY	CONTROL EFFICIENCY (%) SO_2	CONTROL EFFICIENCY (%) PARTICULATE	DEVICE ID	TRANS	CARD
											1
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2

DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD
		SULFUR CONT (%)						
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68 69 70 71	72 73 74 75	76 77 78 79	80
									3

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME (HRS/YR)	SHFT/ DAY	CONTROL EFFICIENCY (%) SO_2	CONTROL EFFICIENCY (%) PARTICULATE	DEVICE ID	TRANS	CARD
											1
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2

DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD
		SULFUR CONT (%)						
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68 69 70 71	72 73 74 75	76 77 78 79	80
									3

PJ	OWNER	TYPE	EMISSION RATE (TON/DAY) SO_2	EMISSION RATE (TON/DAY) PARTICULATE	OPERATING TIME HRS YR	SHFT DAY	CONTROL EFFICIENCY % SO_2	CONTROL EFFICIENCY % PARTICULATE	DEVICE ID	TRANS	CARD
											1
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68	69 70 71	72 73 74 75	76 77 78	79	80
											2

DIST OIL (GAL/DAY)	GAS (10^3 FT^3/DAY)	COAL	RESID OIL	DIST OIL	GAS	COAL ASH CONT (%)	TRANS	CARD
		SULFUR CONT (%)						
45 46 47 48	49 50 51 52 53 54 55 56 57 58 59 60 61 62				63 64 65 66	67 68 69 70 71	72 73 74 75	76 77 78 79	80
									3

REGION			SIC			
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IMPLEMENTATION PLANNING PROGRAM

AREA

DATA RECORD

SITE				PROC	LOCATION X (KM)				LOCATION Y (KM)					AREA (KM^2)				POL JUR		STACK HEIGHT (FT.)				EMISSION RATE SO2 (TON/DAY)							EMISSION RATE PART. (TON/DAY)							ACTION
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	79
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REGION			SIC			
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IMPLEMENTATION PLANNING PROGRAM

DATA RECORD

AREA

SITE				PROC	LOCATION X (KM)				LOCATION Y (KM)					AREA (KM^2)				POL JUR		STACK HEIGHT (FT.)				EMISSION RATE SO2 (TON/DAY)							EMISSION RATE PART. (TON/DAY)							ACTION
8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	79
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DATE _____

NAME _____

PROBLEM NO. _____

NO. OF CARDS _____

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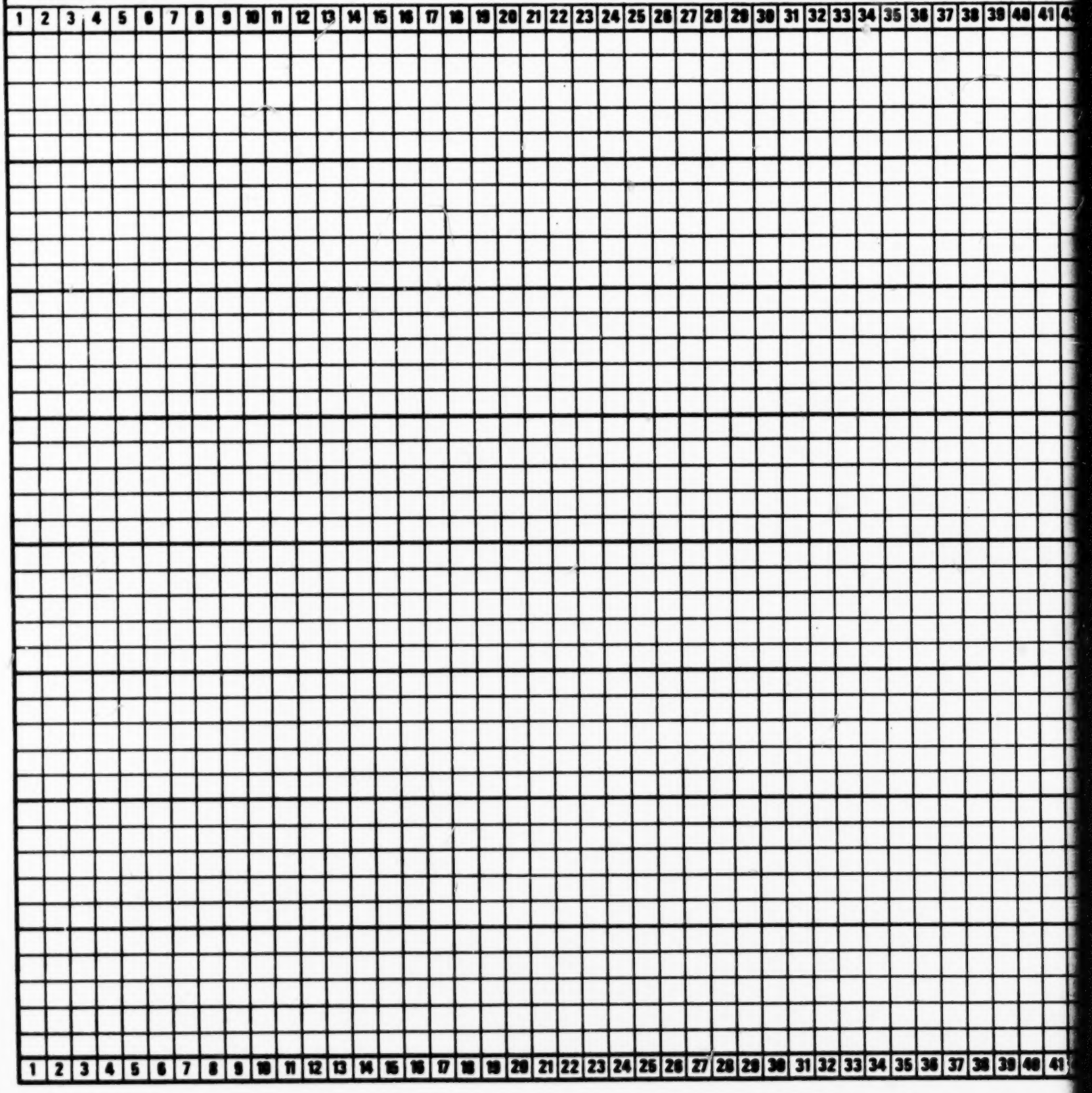

13

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PRIORITY _____

KEYPUNCHED BY _____

VERIFIED BY _____

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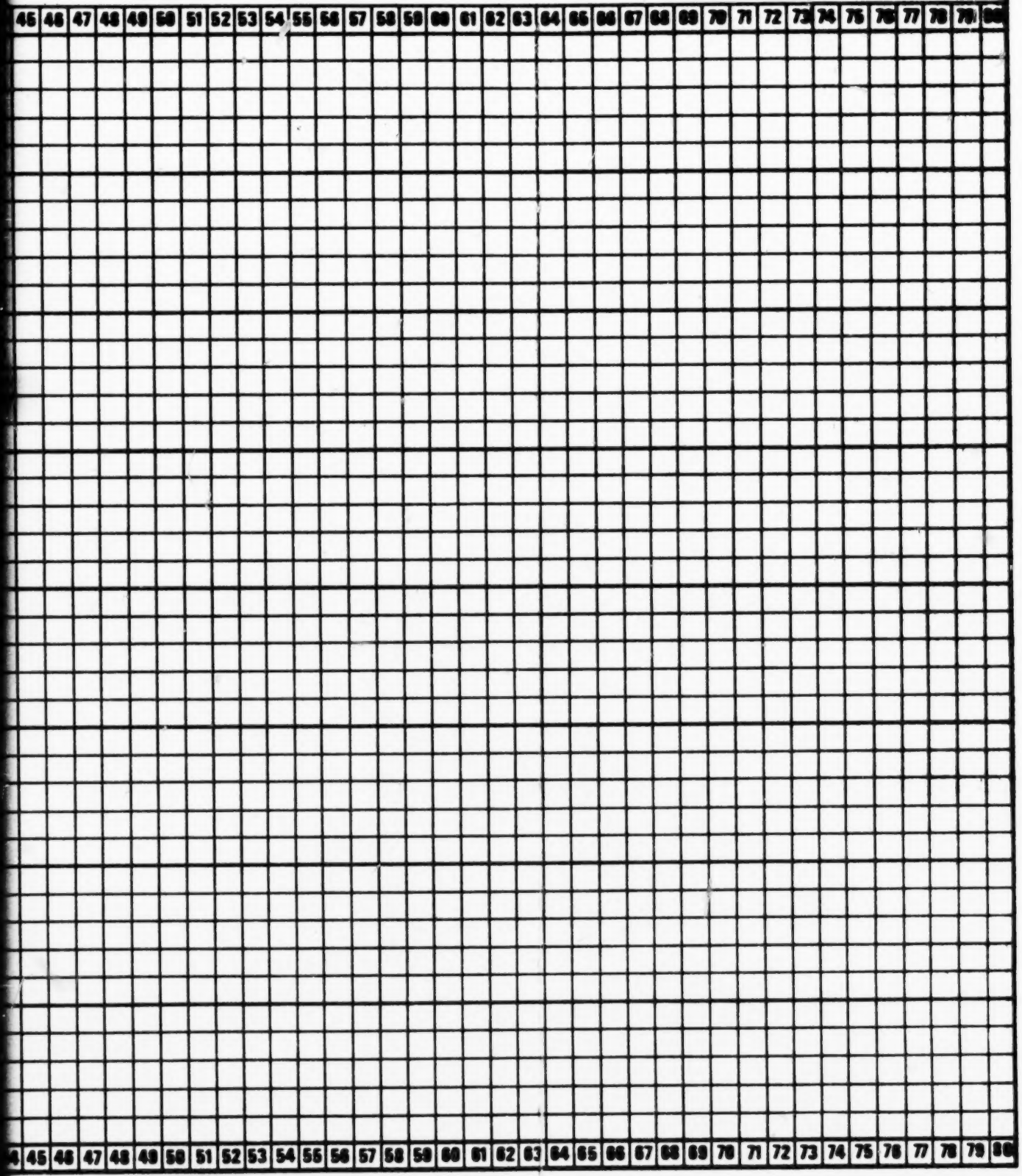

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513

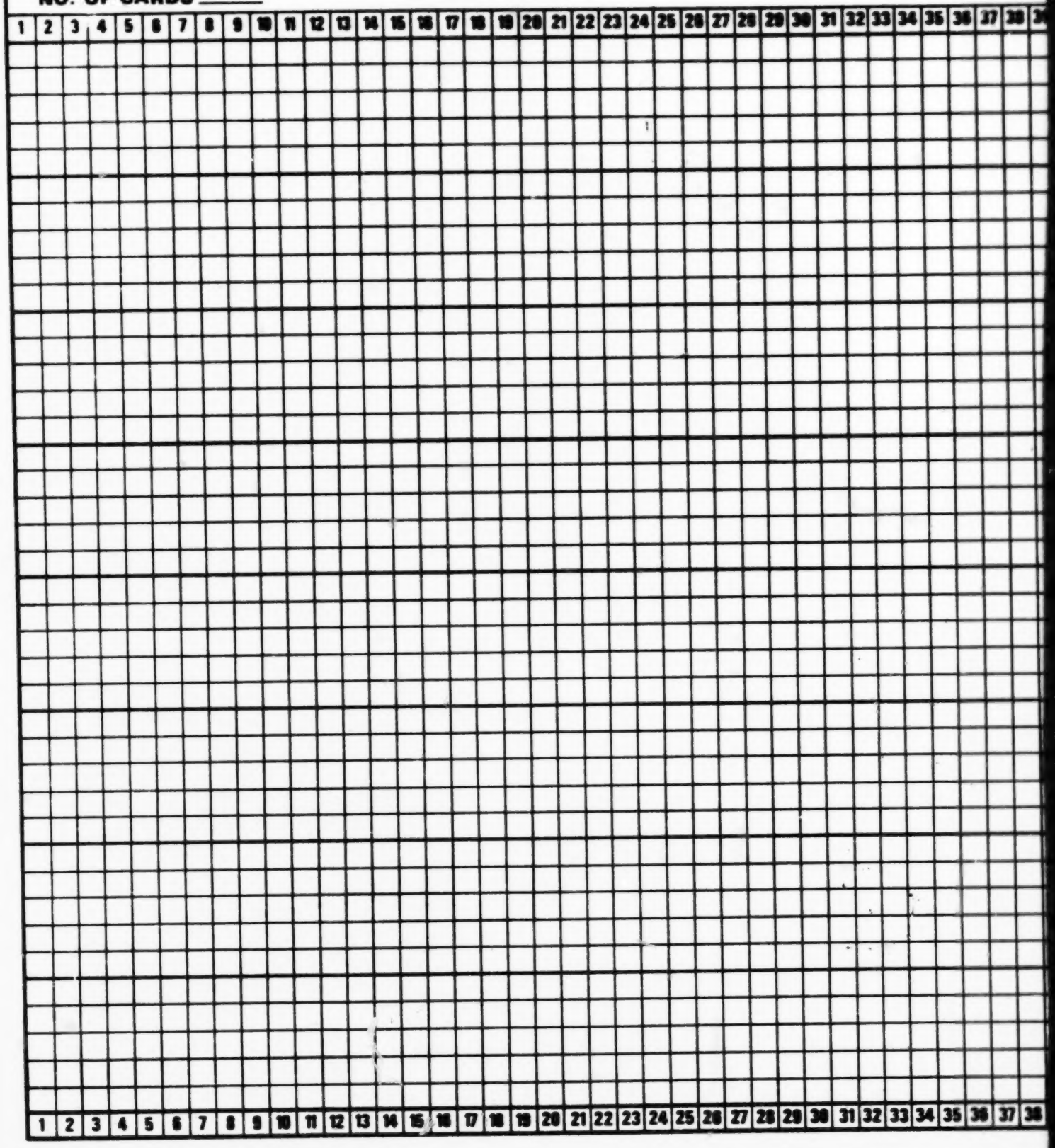
DATE _____

NAME _____

PROBLEM NO. _____

NO. OF CARDS _____

80 COLUMN FR



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REE KEYPUNCH FORM

PRIORITY _____
KEYPUNCHED BY _____
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